

Antarctic Automatic Weather Station Field Report:
1994-1995

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Introduction:

The initial plans for the 1994-1995 Antarctic field season for automatic weather station (AWS) units were outlined at the Annual Automatic Weather Station meeting at Davis, California on 31 March 1994. The plans included an ice breaker cruise along the Adelie Coast and the installation of several units in West Antarctica, near the Siple Coast. The units in West Antarctica would be installed by Twin Otter aircraft based from Byrd Surface camp. Requests for the ice breaker, helicopter, and Twin Otter support were made in the Support Information Packet to Antarctic Support Associates and these arrangements were confirmed at the Orientation Conference in Leesburg, Virginia on 9-11 September, 1994.

Table 1 gives the AWS unit's site name, ARGOS identification number, latitude, longitude, elevation above sea level, site start date, and WMO number for the Global Telecommunications System for AWS units in operation as of 1 March, 1995. Figure 1 shows the locations of widely spaced AWS units on Antarctica. Figure 2 shows the AWS locations along the Adelie coast in support of Prof. Gerd Wendler's research on katabatic winds in the area. Cape Webb and Sutton are new sites. Figure 3 shows the AWS locations in the vicinity of Ross Island which are the same as 1994. Figure 4 shows the locations of AWS units 3310 and 3312 which were purchased from us by Prof. Christof Kottmeier, Alfred Wegener Institute, Germany.

1994-1995 Antarctic Field Season:

The 1994-1995 Antarctic field season began on 10 November 1994 when G. A. Weidner and R. E. Holmes left Madison, Wisconsin for McMurdo Station, Antarctica, arriving on 13 November 1995.

On the morning of 18 November 1994 a NSFPA helicopter flight was made to Linda site. One 1.8 m tower section was installed and the lower delta-T sensor was raised to a height of 1.0 m. The battery voltage was found to be low and replacement batteries would be needed. The Bendix aerovane was tested and was found to be fully functional. AWS 8915 was removed and returned to McMurdo to be repaired.

On 19 November, a discussion took place with Tom Quinn of Antarctic Support Associates about the possibility of moving the site of deployment of the AWS units near the Siple Coast from Byrd Surface Camp to Central West Antarctica (CWA) camp. The move to CWA would save flight time and fuel, and the Twin Otter would be needed there to support other science groups as well. It was

decided that the Siple Coast AWS units would be deployed out of CWA.

On 23 November a NSFA helicopter flight was made to Marble Point AWS site. The four 100 amp-hr lead-acid batteries were replaced by six 40 amp-hr gel cell batteries. A new power junction box was also installed. The lead-acid batteries were returned to McMurdo and were turned over to the Mechanical Equipment Center.

On 28 November, R.E. Holmes left McMurdo Station for CWA via LC-130 for the installation of the AWS sites on the Siple Coast in support of Dr. David Bromwich. Upon arrival, the components for seven AWS units were removed from pallets and prepared for deployment. On 29 November, Twin Otter flights were made to J.C., Erin, Theresa, Harry, and Doug sites and AWS units were installed. On 30 November, Twin Otter flights were made to Brianna and Elizabeth sites and AWS units were installed. Table 1 and 2 give the locations of the AWS sites and the ARGOS identification number. Seven units were installed. The ARGOS numbers of the units that continued to operate are 21355, 57, 58, 59, and 62. R.E. Holmes left CWA for Byrd Surface Camp via LC-130.

On 2 December, Byrd AWS site was visited by snowmobile. One 1.5 m tower section was installed as were six 40 amp-hr gel cell batteries. R.E. Holmes eventually returned to McMurdo. On 7 December, a NSFA helicopter flight was made to Linda AWS site. AWS 8915 was reinstalled, and six 40 amp-hr gel cell batteries were installed. On 8 December Willie Field AWS site was visited by truck. The data storage module for the Ultrasonic Depth Gauge (UDG) was removed for shipment back to Madison, WI, and a new module was installed. A NSFA helicopter flight was made to Minna Bluff AWS site on 9 December. The R. M. Young wind sensor had been severely damaged, and only the vertical shaft remained on the tower. The remaining portion of the wind sensor could not be found. A new R. M. Young wind sensor was installed. G.A. Weidner and R.E. Holmes returned to Madison, Wisconsin in time for Christmas.

On 15 December 1994, J. J. Cassano and M. W. Seefeldt left Madison, WI for Hobart, Tasmania, arriving there on 17 December, beginning the Adelie Coast portion of the field season.

On 26 December, a USCG helicopter flight was made to D-10 AWS site. The height of the top of the tower to the snow was approximately 1.8 m, and the vertical prong of the antenna had been broken off. One 1.8 m tower section was added and the antenna was replaced. A second helicopter flight was made to Sutton AWS site and AWS 8939 was installed. A third USCG helicopter flight was made on 26 December to Port Martin AWS site. The aerovane impeller was broken and the tachometer was also malfunctioning. The 0.9 m boom was replaced with a 1.2 m boom, and both an aerovane and a Hydro-tech high wind system were installed. AWS 8930 was removed and returned to the ship to modify the electronics for use with the Hydro-tech high wind system.

A helicopter flight was made back to Port Martin on 27 December and AWS 8930 was replaced. The transmission of the unit was not received by the Telonics uplink receiver, and further investigation revealed a faulty antenna cable. A flight was made back to the Polar Star to retrieve a new antenna cable. A

return flight was made to Port Martin AWS site and the antenna was installed. Transmission was then verified by the uplink receiver.

Cape Denison AWS site was also visited by USCG helicopter on 27 December. The aerovane impeller had one blade missing and one of the prongs of the antenna was missing. The 0.9 m boom was replaced with a 1.2 m boom, and both a replacement aerovane and a Hydro-tech high wind system were installed. A new antenna was also installed. AWS 8933 was replaced with 8907.

On 28 December a USCG helicopter flight was made to Penguin Point AWS site. Save for the antenna missing one prong, the unit was in good working order. An new antenna was installed. A flight was made to Cape Webb and AWS 8933 was installed.

On 3 January, 1995, a USCG flight was made to Manuela AWS site. The site was not located due to poor visibility. A second flight was made to Whitlock AWS site that day. The antenna had a missing prong. AWS 8929 was replaced with AWS 8921.

Cassano and Seefeldt arrived at McMurdo on 4 January, 1995. Upon arrival of the USCG Polar Star on 8 January, 1995 the remaining AWS components were unloaded from the ship and prepared for return to Madison, WI.

A USCG helicopter flight was made to both Pegasus North and Pegasus South AWS sites on 7 January. Both stations were in good working order. A new location for Pegasus South was obtained using the GPS.

Willy Field AWS site was visited by truck on 7 January. New batteries for the CR-10 data logger were installed as well as a solar panel to charge the batteries.

Dec 94 when

AWS 8910 was installed by Tony Amos assisted by members of the Long Term Ecological Research Program at the Hugo Island Group and name "Santa Claus". The water temperature sensor was not installed. The Bonaparte Point AWS unit was not working very well. Kevin Bliss at Palmer Station inspected the AWS installation and found that the battery connections were loose and corroded. The failed batteries were removed and the connections were repaired bypassing the plugs and the unit started operation but the operation is intermittent. Tony Amos inspected the Racer Rock AWS unit and found a similar problem. The AWS units will need to be modified to cope with the salt laden air. This remains to be done. The modifications will include the Santa Claus AWS site and any future sites in the area.

AWS units were shipped to Expedition Polaris Francaises (EPF) at Dumont d'Urville to re-establish D-57 site at the request of the EPF through Prof. Gerd Wendler. The EPF was unable to visit D-57 due to the Astrolobe delays because of ice. Dumont d'Urville was not fully supplied for the winter.

Two AWS units were shipped to the Japanese Antarctic Research Expedition (JARE) for installation at the Relay Station and Dome Fuji (see Figure 1 and Table 1) by Takao Kameda. The units are operating and the Dome Fuji AWS unit is the highest in Antarctica. These are the first inland meteorological

measurements in the NE sector of the Antarctic Continent since Plateau Station. WMO numbers will be requested for both sites so that the data can be entered into the Global Telecommunications System (GTS).

The British Antarctic Survey (BAS) field season is not yet completed. It is hoped that an AWS unit can again be placed at Cape Adams.

Prof. Christof Kottmeier, Alfred Wegener Institute, Germany, purchased two AWS units from the University of Wisconsin and installed them in the Weddell Sea area. Figure 4 shows the locations along with the locations of buoys and one other AWS unit near Cape Adams.

Plans for the 1995-1996 Field Season:

The Support Information Package (SIP) for the 1995-1996 Field Season in Antarctica is due about 1 April 1995. The SIP must include all plans for the use of the C-130, Twin Otter, and Huey aircraft and the ice breaker.

The Siple Coast AWS array has two units not being received and one unit to be installed. The repairs and installation are planned for the 15 November to 15 December 1995 period and Twin Otter flights will be requested for the installations.

The West Antarctic Ice Sheet Initiative (WAISI) is planned for funding. The AWS program is to provide meteorological support for WAISI. The first step will be the installation of an AWS at Siple Dome that also measures a snow temperature profile to about 16 meters depth.

Table 1. The 1995 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.

Site	ARGOS ID	Lat. (deg)	Long. (deg)	Alt. (m)	Date Start	WMO#
Adelie Coast						
D-10	8914	66.71°S	139.83°E	243	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	8930	66.82°S	141.40°E	39	Jan 90	
Cape Denison	#8907	67.01°S	142.66°E	31	Jan 90	
Penguin Point	8929	67.65°S	146.18°E	30	Dec 93	89847
Sutton	*8939	67.08°S	141.37°E	871	Dec 94	
Cape Webb	*8933	67.93°S	146.82°E	37	Dec 94	
West Antarctica						
Byrd Station	8903	80.00°S	120.00°W	1530	Feb 80	89324
Brianna	*21362	83.89°S	134.14°W	549	Nov 94	
Elizabeth	*21356	82.61°S	137.08°W	549	Nov 94	
J.C.	*21357	85.07°S	135.51°W	549	Nov 94	
Erin	*21361	84.91°S	128.82°W	1006	Nov 94	
Harry	*21355	83.00°S	121.38°W	945	Nov 94	
Theresa	*21358	84.60°S	115.82°W	1463	Nov 94	
Doug	*21359	82.32°S	113.23°W	1433	Nov 94	
Mount Siple	8981	73.20°S	127.05°W	230	Feb 92	89327
Ross Island Region						
Marble Point	8906	77.44°S	163.75°E	84	Feb 80	89866
Ferrell	8934	78.02°S	170.80°E	45	Dec 80	89872
Pegasus North	8927	77.95°S	166.51°E	10	Jan 90	89667
Pegasus South	8937	77.99°S	166.58°E	10	Jan 91	
Minna Bluff	8988	78.56°S	166.69°E	920	Jan 91	89768
Linda	8915	78.50°S	168.35°E	50	Jan 91	89769
Willie Field	8901	77.86°S	167.02°E	40	Jan 92	
Ocean Islands						
Whitlock	8921	76.14°S	168.40°E	274	Jan 82	89865
Scott Island	8983	67.37°S	179.97°W	30	Dec 87	89371
Young Island	8980	66.28°S	162.33°E	30	Dec 90	89660
Possession Island	8984	71.90°S	171.13°E	30	Dec 92	89879
Ross Ice Shelf						
Marilyn	8931	79.98°S	165.03°E	75	Jan 84	89869
Schwerdtfeger	8913	79.94°S	169.83°E	60	Jan 85	89868
Gill	8911	80.03°S	178.63°W	55	Jan 85	89863
Elaine	8900	83.15°S	174.46°E	60	Jan 86	89873
Lettau	8908	82.52°S	174.43°W	55	Jan 86	89377
Reeves Glacier						
Manuela	8905	74.92°S	163.60°E	80	Feb 84	89864
Sandra	8923	74.48°S	160.48°E	1525	Jan 88	89861
Lynn	8935	74.21°S	160.39°E	1772	Jan 88	89860
Antarctic Peninsula						
Larsen Ice	8926	66.97°S	60.55°W	17	Oct 85	89262
Butler Island	8902	72.20°S	60.34°W	91	Mar 86	89266
Uranus	8920	71.43°S	68.93°W	780	Mar 86	89264
Cape Adams		75.01°S	62.53°W	25	Jan 89	89268
Racer Rock	8947	64.16°S	61.54°W	17	Nov 89	89261
Bonaparte Point	8912	64.78°S	67.06°W	8	Nov 91	89269
Recovery Glacier	8932	80.82°S	22.26°W	1220	Jan 94	
Ski-Hi	8917	74.97°S	70.77°W	1395	Feb 94	
Santa Claus I	*8910	64.96°S	65.67°W	25	Dec 94	
	*3310	73.00°S	19.04°W		Jan 95	
	*3312	77.32°S	50.60°W		Jan 95	
	*3313	73.72°S	60.40°W		Jan 95	
High Polar Plateau						
Clean Air	8987	90.00°S		2835	Jan 86	89208
Henry	8985	89.00°S	0.30°W	2755	Jan 93	89108
Nico	8924	89.00°S	90.13°E	2935	Jan 93	89799
Relay Station	*8918	74.01°S	43.00°E	3353	Feb 95	
Dome Fiji	*8982	77.31°S	39.70°E	3810	Feb 95	

* New locations for 1995

CRS, 7 February 1995

New ARGOS ID for 1995 at the site

Table 2. Antarctic automatic weather station locations for 1995 including the ARGOS ID and WMO#. The AWS units are in the order of the ARGOS ID.

Site	ARGO ID	Lat. (deg)	Long. (deg)	Alt. (m)	Date Start	WMO#
Elaine	8900	83.15°S	174.46°E	60	Jan 86	89873
Willie Field	8901	77.86°S	167.02°E	40	Jan 92	
Butler Island	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	77.44°S	163.75°E	84	Feb 80	89866
Cape Denison	*8907	67.02°S	142.68°E	31	Jan 90	
Lettau	8908	82.59°S	174.27°W	55	Jan 86	89377
	8909		Klinck, Greenland			
Santa Claus I	*8910	64.96°S	65.67°W	25	Dec 94	
Gill	8911	80.03°S	178.63°W	55	Jan 85	89863
Bonaparte Point	8912	64.78°S	67.06°W	8	Nov 91	89269
Schwerdtfeger	8913	79.94°S	169.83°E	60	Jan 85	89868
D-10	8914	66.71°S	139.83°E	243	Feb 80	89832
Linda	8915	78.50°S	168.35°E	50	Jan 91	89769
D-47	8916	67.38°S	138.72°E	1560	Jan 83	89834
Ski-Hi	8917	74.97°S	70.77°W	1395	Feb 94	WMO#
Relay Station	*8918	74.01°S	43.00°E	3353	Feb 95	
D-80	8919	70.02°S	134.72°E	2500	Nov 84	89836
Uranus	8920	71.43°S	68.93°W	780	Mar 86	89264
Whitlock	8921	76.14°S	168.40°E	274	Jan 82	89865
	8922		Kenton, Greenland			
Sandra	8923	74.48°S	160.48°E	1525	Jan 88	89861
Nico	8924	89.00°S	90.13°E	2935	Jan 93	89799
	8925		Not active			
Larsen Ice	8926	66.97°S	60.55°W	17	Oct 85	89262
Pegasus North	8927	77.95°S	166.51°E	10	Jan 90	89667
	8928		Barber, Greenland			
Penguin Point	8929	67.65°S	146.18°E	30	Dec 93	89847
Port Martin	8930	66.82°S	141.40°E	39	Jan 90	
Marilyn	8931	79.98°S	165.03°E	75	Jan 84	89869
Recovery Glacier	8932	80.82°S	22.26°W	1220	Jan 94	
Cape Webb	*8933	67.93°S	146.82°E	37	Dec 94	
Ferrell	8934	78.02°S	170.80°E	45	Dec 80	89872
Lynn	8935	74.21°S	160.39°E	1772	Jan 88	89860
	8936		GISP2 Greenland			
Pegasus South	8937	77.99°S	166.58°E	10	Jan 91	
	8938		Not active			
Sutton	*8939	67.08°S	141.37°E	871	Dec 94	
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	230	Feb 92	89327
Dome Fiji	*8982	77.31°S	39.70°E	3810	Feb 95	
Scott Island	8983	67.37°S	179.97°W	30	Dec 87	89371
Possession Is.	8984	71.90°S	171.13°E	30	Dec 92	89879
Henry	8985	89.00°S	0.30°W	2755	Jan 93	89108
	8986		Julie, Greenland			
Clean Air	8987	90.00°S		2835	Jan 86	89208
Minna Bluff	8988	78.56°S	166.69°E	920	Jan 91	89768
	8989		Matt, Greenland			
Harry	*21355	83.00°S	121.38°W	945	Nov 94	
Elizabeth	*21356	82.61°S	137.08°W	549	Nov 94	
J.C.	*21357	85.07°S	135.51°W	549	Nov 94	
Theresa	*21358	84.60°S	115.82°W	1463	Nov 94	
Doug	*21359	82.32°S	113.23°W	1433	Nov 94	
	21360		Not active			
Erin	*21361	84.91°S	128.82°W	1006	Nov 94	
Brianna	*21362	83.89°S	134.14°W	549	Nov 94	

* New locations for 1995

New ARGOS ID for 1995

CRS, 9 February 1995

Table 3. Installations planned for the 1995-1996 Antarctic Field Season

West Antarctica			
Bromwich Array	81.20°S	126.10°W	1000 m
Siple Dome	82.00°S	150.00°W	
Ross Island Region			
Cape Crozier	77.50°S	174.46°E	
Beaufort Island	77.??°S	167.??°E	
Ross Ice Shelf			
Byrd Neve	80.5?°S	152.??°E	
Ross Ice Shelf Edge	78.??°S	177.50°E	
Martha III	78.38°S	173.42°W	
	79.0?°S	158.0?°W	
	82.0?°S	158.0?°W	
	85.0?°S	158.0?°W	
Antarctic Peninsula			
Jobin Island	64.9?°S	64.0?°W	
Biscoe Island	66.??°S	63.??°W	
Peter I Island	69.8?°S	91.??°W	
Joinville Island	63.??°S	54.??°W	

Environmental Impact of the Antarctic automatic weather stations on the flora and fauna of Antarctica.

The majority of the Antarctic automatic weather station (AAWS) sites are located on snow fields and away from the sea shore.

The AAWS sites not located on snow and likely near the sea shore are:

Port Martin	66.82°S	141.40°E	39 Jan 90	Rock
Cape Denison	67.01°S	142.66°E	31 Jan 90	Rock
Penguin Point	67.65°S	146.18°E	30 Dec 93	Rock
Cape Webb	67.93°S	146.82°E	37 Dec 94	Snow
Marble Point	77.44°S	163.75°E	84 Feb 80	Rock
Ferrell	78.02°S	170.80°E	45 Dec 80	Snow
Pegasus North	77.95°S	166.51°E	10 Jan 90	Snow
Pegasus South	77.99°S	166.58°E	10 Jan 91	Snow
Scott Island	67.37°S	179.97°W	30 Dec 87	Rock
Young Island	66.28°S	162.33°E	30 Dec 90	Rock
Possession Is.	71.90°S	171.13°E	30 Dec 92	Rock
Manuela	74.92°S	163.60°E	80 Feb 84	Rock
Larsen Ice	66.97°S	60.55°W	17 Oct 85	Snow
Butler Island	72.20°S	60.34°W	91 Mar 86	Snow
Racer Rock	64.16°S	61.54°W	17 Nov 89	Rock
Bonaparte Point	64.78°S	63.06°W	8 Nov 91	Rock
Santa Claus I	64.96°S	65.67°W	25 Dec 94	Rock

Possible Environmental impact

Site Lifetime

We have to consider the lifetime of each site as the lifetime of the supporting grant which is three years or less with a reasonable probability of renewal for another three years. Every time we try to stop maintaining a site someone with sufficient influence wants the site to continue. Some sites have been terminated but that was before anyone with sufficient influence became used to having the data.

Port Martin and Cape Denison AWS units were installed by the Expedition Polaris Francaises and are located on rocks. There are Adelie Penguins nesting in the area. At Port Martin there were penguins nesting within 10 meters of the AWS unit in December 1994. There were not any penguin nests noticeable near the AWS unit in 1990 when the unit was installed and January 1991 during a visit to the site.

Penguin Point AWS site is on rock but in spite of the name does not have any

nesting penguins in the vicinity in December 1992 when the site was installed. No nesting penguins were in the area in December 1994. Cape Webb AWS site was installed on snow during December 1994. There was no evidence of penguins in the vicinity.

Marble Point AWS site was visited during the 1994-1995 Field Season to replace the batteries powering the AWS unit. There is not any evidence of life in the immediate vicinity of the Marble Point AWS site. When the AWS unit was powered by a radio active thermal generator there were penguin feathers around the generator.

Scott, Possession, and Young Islands may have birds nesting on them. Scott Island is nicely covered with birds carefully watching all human activities.

A skua flew over the Ferrell AWS site several years ago.

Pegasus North has the remains of an emperor penguin nearby. They have been there for several years.

Racer Rock was installed for Research on Antarctic Coastal Ecosystem Rates Program in November 1989 by Tony Amos. There may be seals, penguins, birds, and lichens in the area.

Bonaparte Point was installed by Tony Amos in 1991. There may be seals, penguins, birds, and lichens in the area.

Santa Claus I was installed by Tony Amos and members of LTER during December 1994. I assume that there would be seals, penguins, birds, and lichens in the area.

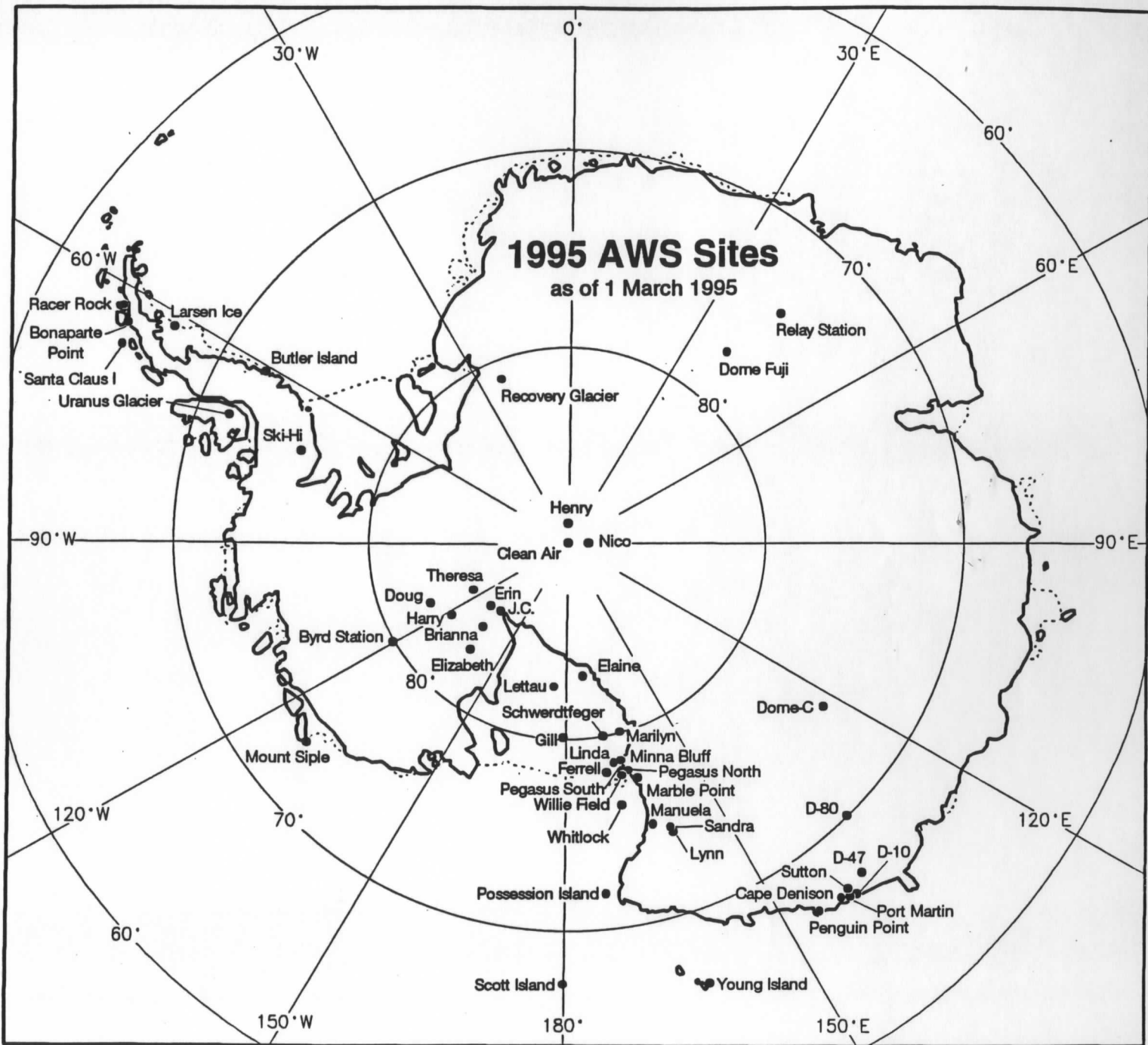


Figure 1. Map of Antarctica showing the locations of the AWS sites for 1995.

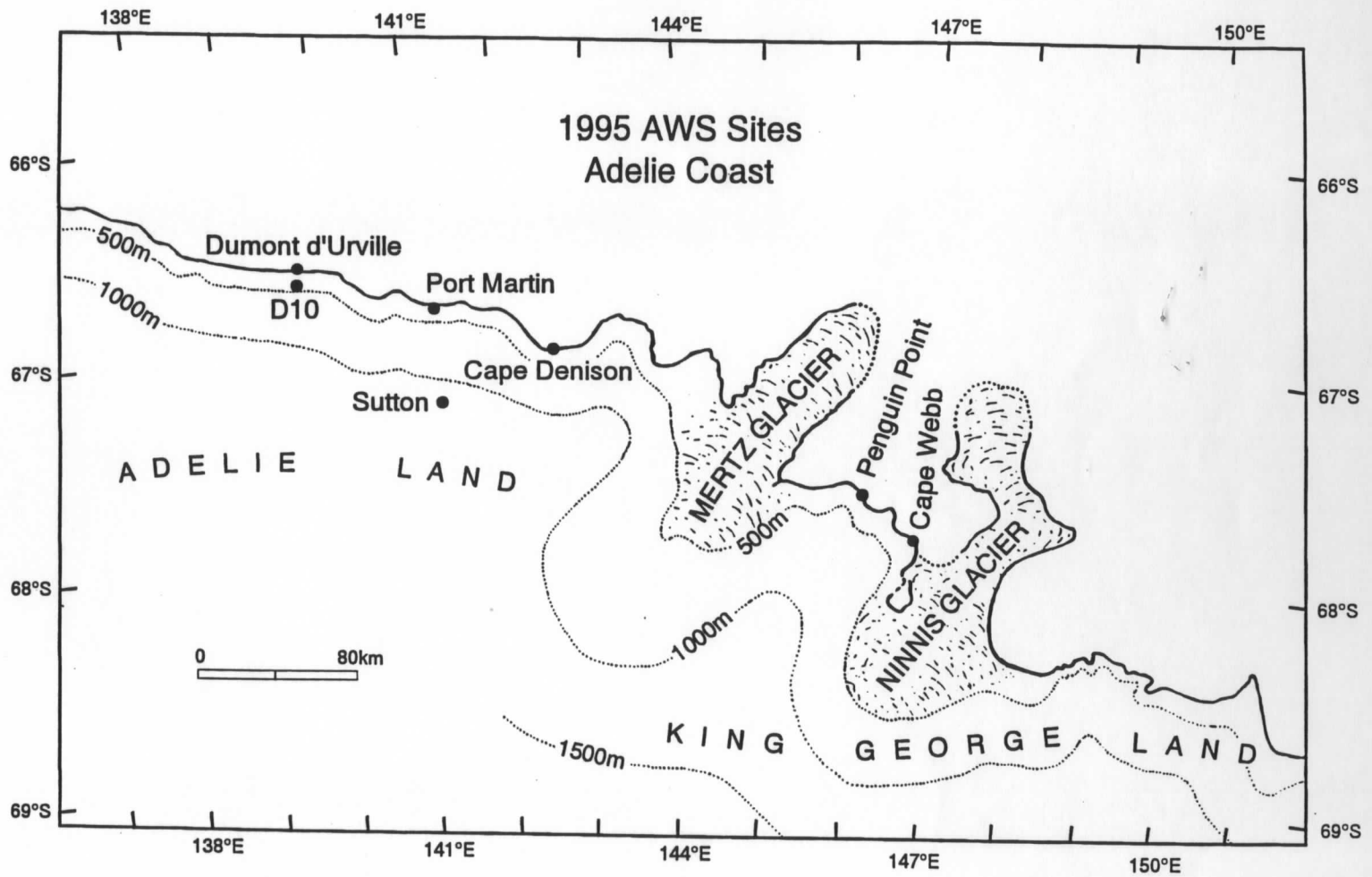


Figure 2. Map of the Adelie Coast, Antarctica showing the 1995 locations of the AWS sites.

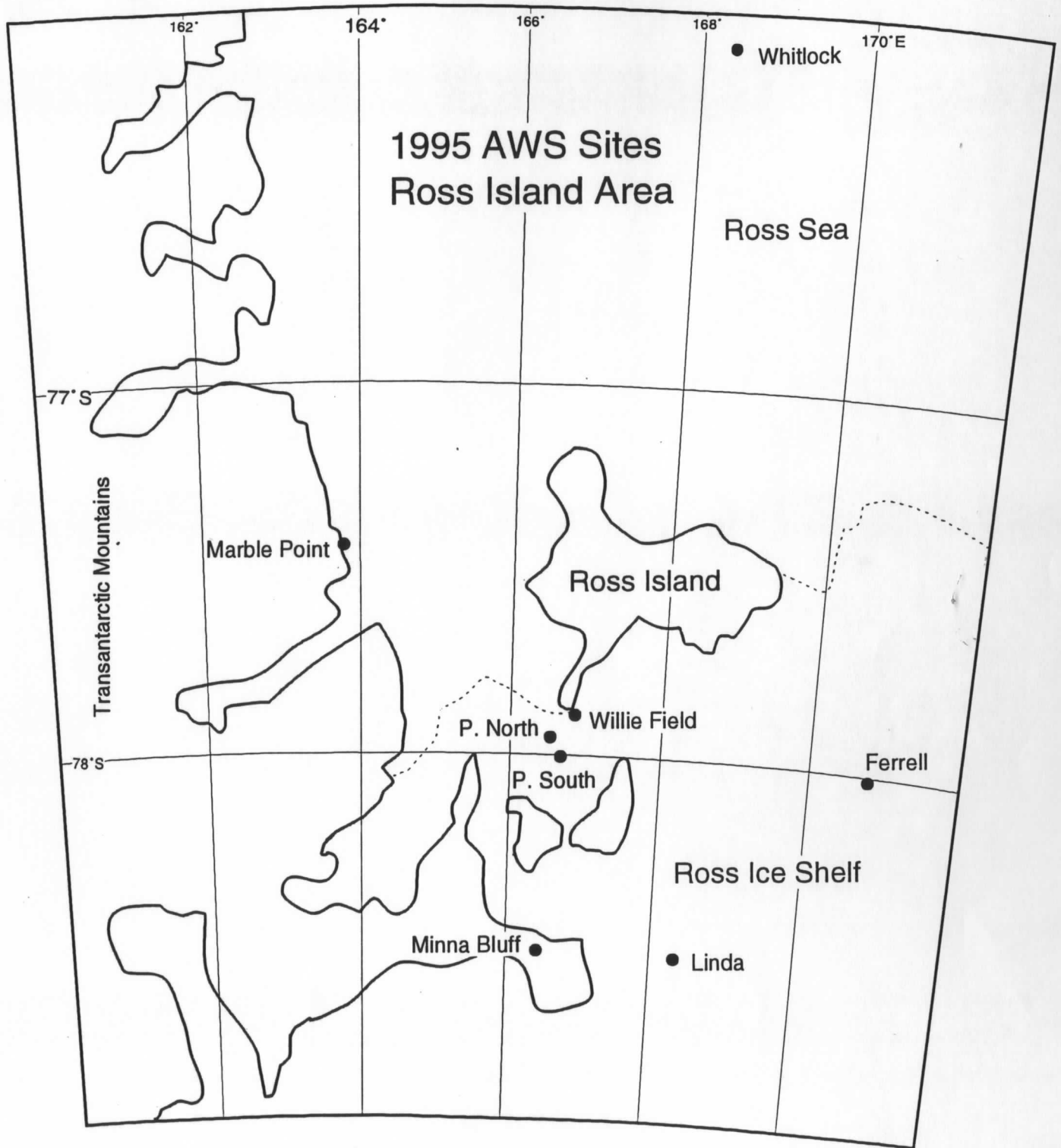


Figure 3. Map of the Ross Island Region showing the 1995 locations of the AWS sites.

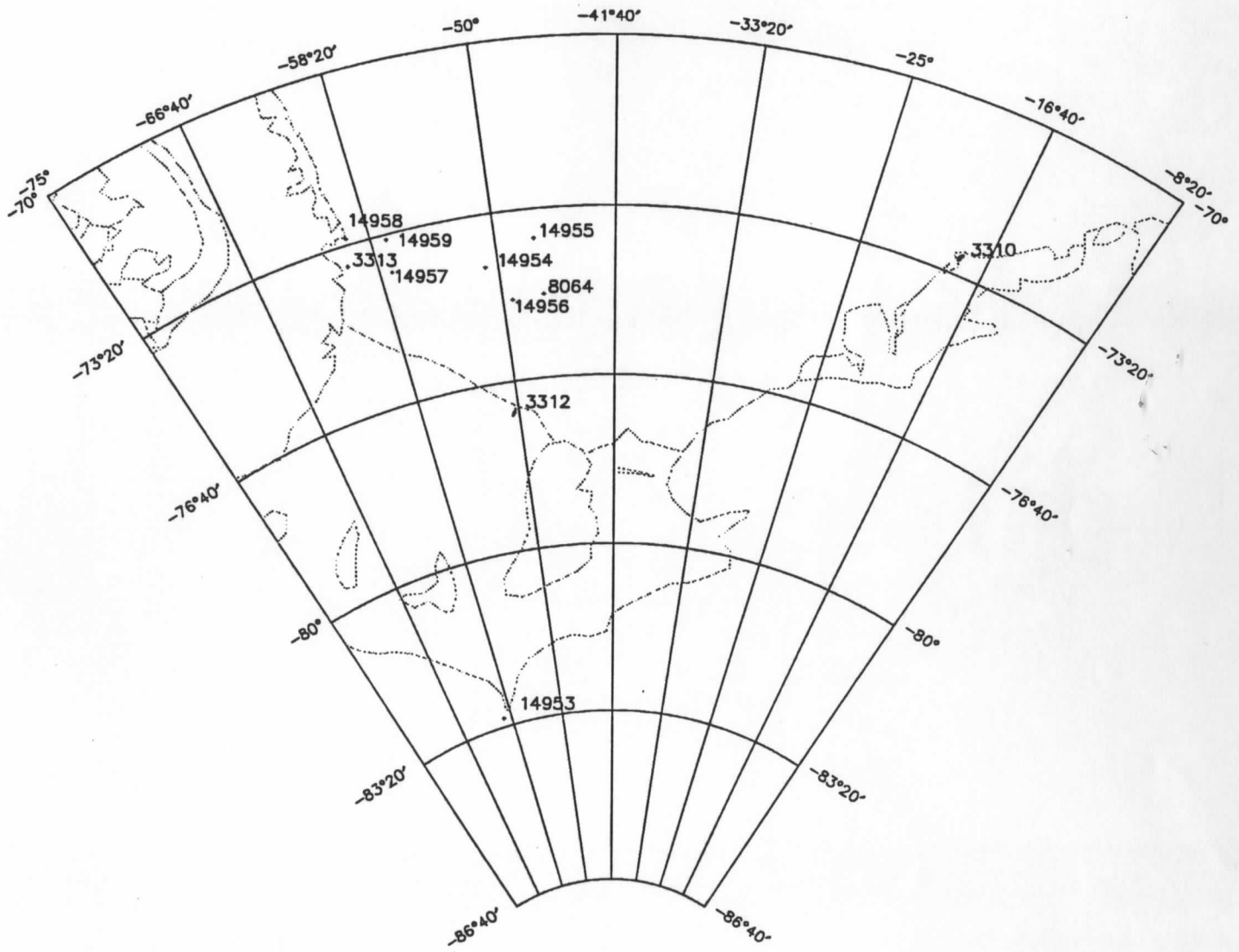


Figure 4. Map of the Weddell Sea area showing the 1995 locations of the buoys (149??, 8064) and AWS units (33??). 3310 and 3312 were provided by the University of Wisconsin.



MINISTÉRIO DA CIÊNCIA E TECNOLOGIA
INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS

Ofício no.DSR-027/95

São José dos Campos, February 16, 1995.

Dear Prof. Stearns:

I am again writing to you regarding ARGOS automatic weather stations in Antarctica. My ARGOS station at Elephant Island is fully operational and should become a GTS station very soon. Another one is being installed on a peak at King George Island, and funds (~25K) have already been awarded for three additional automatic stations in the Peninsula region. It is in relation to these three new stations that I am seeking your advice.

Instead of starting another network of automatic stations in Antarctica I think it will be more appropriate to integrate my efforts into your already operational network. Within this scope I would be ready to install the three stations in the Peninsula region at places you consider as priority, and also to use any hardware you choose (provided it is within my budget).

Additionally, the Brazilian Antarctic Program (PROANTAR), through the Brazilian Navy ship and helicopters that will deploy and provide yearly maintenance of these three stations, could also support any of your stations in the northern region of the Antarctic Peninsula. For your planning, this ship is available every Antarctic summer, from about November until March, operating in the west coast of the Peninsula; its helicopters can normally reach places up to 40 km from the ship.

Please let me know as soon as possible your opinion about this possibility. I will be in your country from March 12-17 for a conference at Williamsburg, and in case of interest maybe we could schedule a meeting to discuss this subject. My Email is: asetzer@tid.inpe.br, and my fax is ++55(123)21-8743.

Looking forward to your answer,

Sincerely,

Dr. Alberto Setzer

Divisão de Sensoriamento Remoto-DSR

Prof. Charles Stearns
SSEC/University of Wisconsin
1225 West Dayton St.
Madison, WI 53706
U.S.A.

Return-Path: <asetzer@tid.inpe.br>
Date: Tue, 7 Mar 95 21:14:01 EST
From: asetzer@tid.inpe.br (Alberto Setzer)
Message-Id: <9503080014.AA02933@tid.inpe.br>
To: ChuckS@ssecmail.ssec.wisc.edu
Subject: Re: AWS units on the west side of the Pennin

Dear Prof Stearns:

Many thanks for your Email of today.

I am familiar with your publications containing data of the AWS stations, where a map always show the location of your stations. Actually, this is the reference I have used to suggest the locations of the three AWS for the Brazilian Antarctic Program trying to fill in the gaps: Peter I Island, Briscoe Island and Joinville Island.

I'll need some months to receive their final confirmation about these three sites, because they have to examine the logistics involved in depolying the AWS at these places.

In any case, if you are interested, we may proceed with the discussions and purchase of the three AWSs regardless of the deployment sites. We have some five months to define the final sites.

Best regards, Alberto Setzer

FROM: ChuckStearns

TO: asetzer@tid.inpe.br

DATE: 03-08-95

TIME: 10:05

CC: aws

bernielettau

SUBJECT: Re: AWS units on the west side of the Pe

PRIORITY:

ATTACHMENTS: table95.txt

Dear Alberto:

Glad to hear from you. Enclosed is my table for 1995. In the Antarctic Peninsula area you will find an AWS unit on Hugo Island. Joinville Island looks like an excellent site for an AWS unit. I could not find Briscoe Island but I did find Biscoe Islands which would also be a good site. Peter I is desired by every one.

The question that arises is "What kind of an AWS unit should we put on these islands". The Norwegian experience is that trying to measure wind speed and direction on Peter I island is a waste of time as the unit freezes up almost immediately. I had a wind system on Scott Island and it was quickly destroyed. I constructed what I call a "Dog House AWS". The unit measures pressure and temperature. There are 200 kg of batteries in the base which will run the unit for 5 years. There also is a solar panel to charge the batteries if the panel is exposed to the sun and is not buried in snow. The unit can be carried to the site and set down by a helicopter in a suitable spot. I have dog houses at Possession Island, Scott Island, Mount Siple, and at Young Island. The Young Island AWS stoped after five years and needs to be replaced next field season.

Joinville Island may need to be a dog house because there could be extensive icing at that site. I am not familiar with the island but I may be able to find photos. Peter I will have to be a dog house. If Briscoe is actually Biscoe then we could try a wind system there. We need to modify our AWS units for the salt water islands such as Hugo and Racer because after two years our connectors (that work very well over snow) start falling apart. We need to use brass or stainless steel instead of aluminum and seal the wires better. The dog house is sealed except for a couple holes in the bottom. We have not recovered one yet but I hope to get Young Island back next season.

I will put you and your suggestions on the agenda for the AWS meeting next week. Regards, Stearns