Antarctic Peninsula Automatic Weather Station Servicing by BAS for Summer 2006/2007 and an update on the READER project

Steve Colwell
And
Cathy Moore

Overview

- The AWS network.
- Work done this season
- Future plans
- Data processing at BAS
- READER

Click on an area to enlarge

Servicing done this last season

- **Fossil Bluff**

  - A Campbell AWS was installed in Previous year

  - Data downloaded and instruments checked

  - CR10X logger replaced by new CR1000 with new ST-20 Argos transmitter

- **Sky Blu**

  - New Campbell AWS had run alongside old for 1 year

  - Old AWS transmitted through year but were unable to recover stored data from New AWS logger (CR10X)

  - New CR1000 logger /transmitter installed

  - Old AWS removed

- **Larsen, Butler and Limbert**

  - New Campbell AWS installed

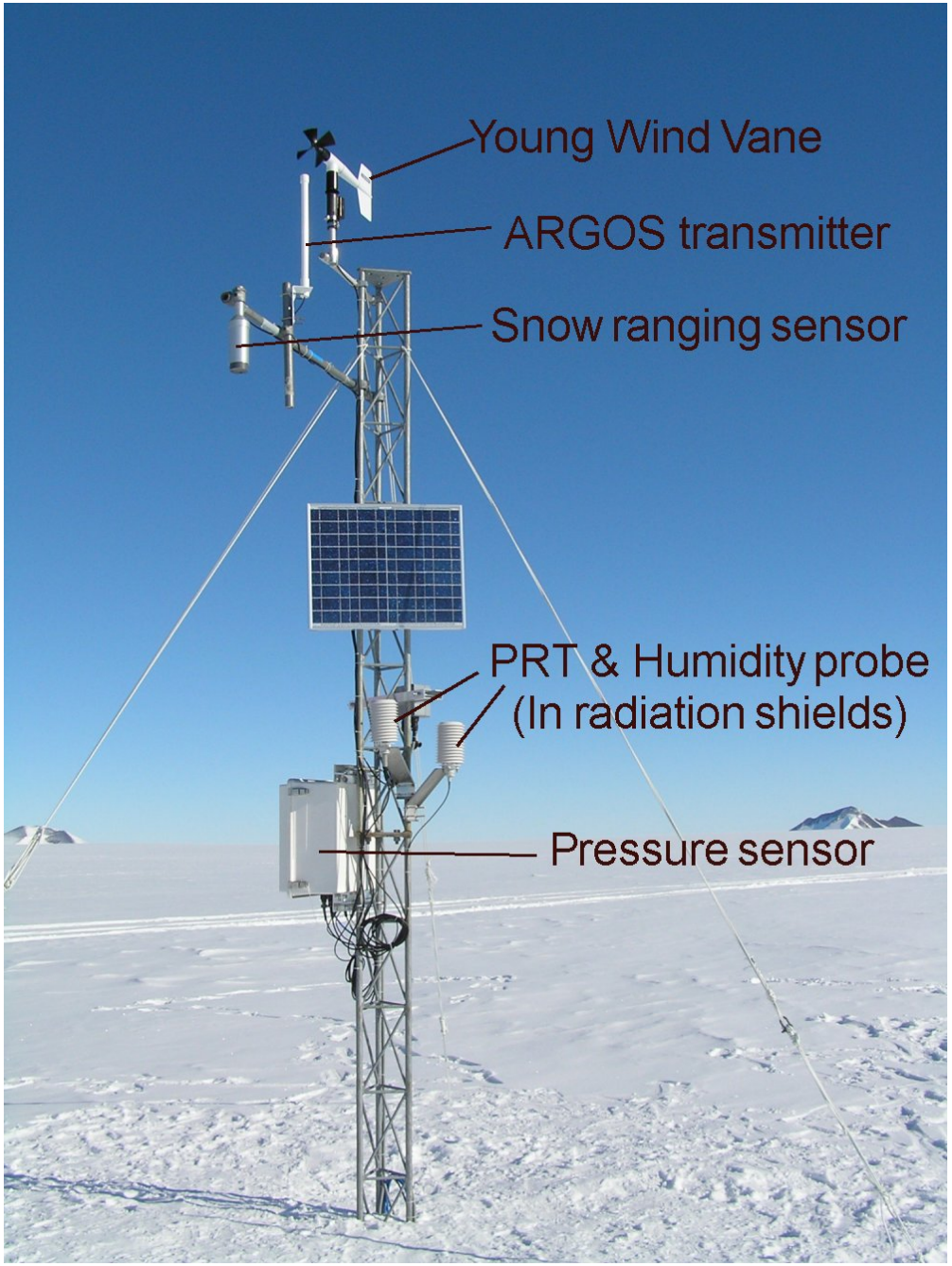
  - Old AWS removed

  - New metal style of battery box used

Summary

All 5 AWSs are now:

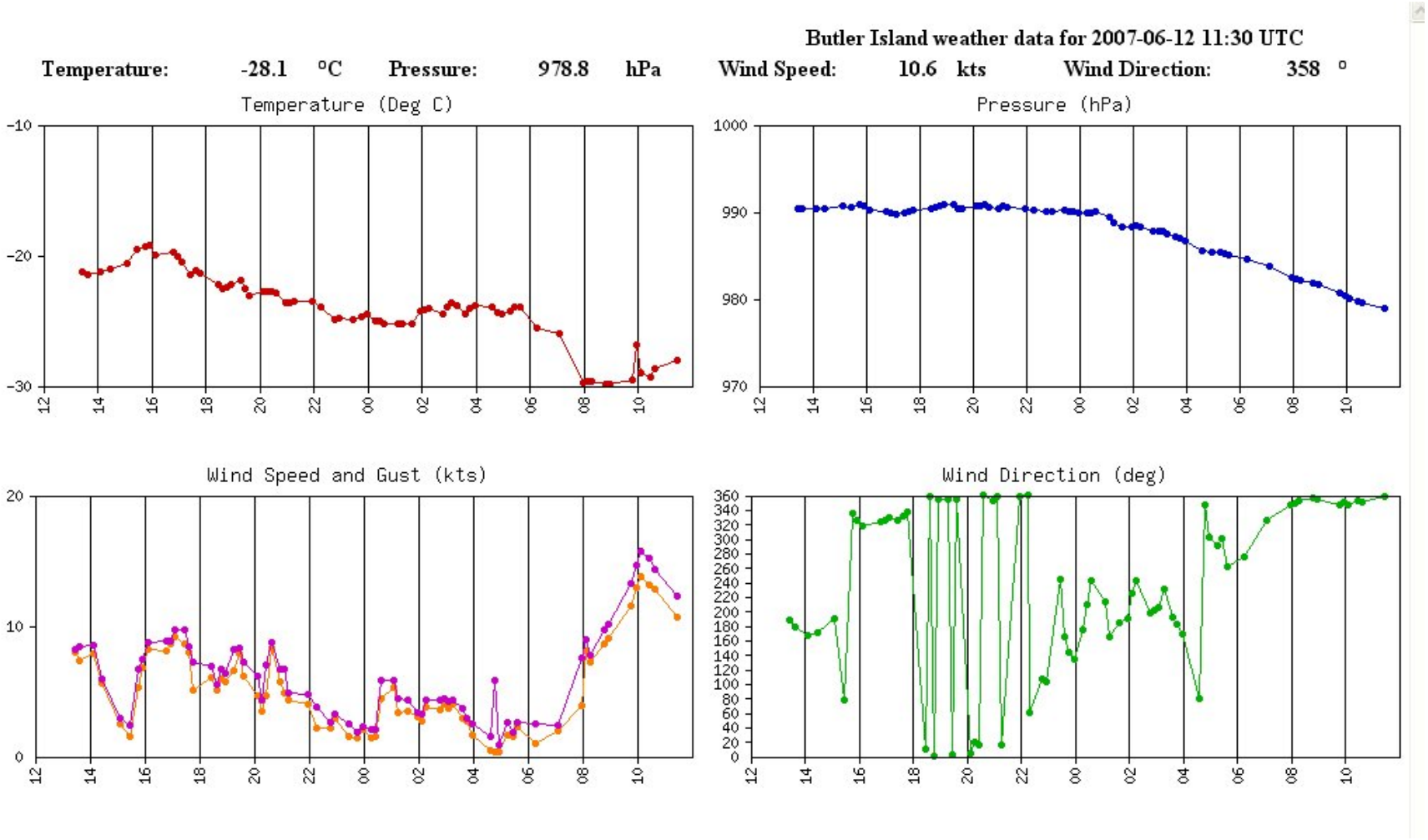
- Campbell Scientific CR1000 loggers
- Transmit to ARGOS
- Also measure snow accumulation and humidity
- Data from ARGOS converted into Synops and added to GTS and all 10 min data for the year downloaded each summer season
- Wooden battery boxes replaced by metal ones
- All instruments on all stations currently working!


Young Wind Vane
ARGOS transmitter
Snow ranging sensor
PRT & Humidity probe
(In radiation shields)
Pressure sensor

AWS Details

Name	WMO/ **AWS** number	Latitude	Longitude	Height	Magnetic Deviation	Date of data
Butler Island	89266 **8902**	S72°12.39	W060°10.20	114m	E19	21.01.07
Larsen	89262 **8926**	S67°74	W061°31.15	34m	E16	13.01.07
Shelf (Site 8) (Limbert)	89257 **8925**	S75°53.18	W059°10.63	approx 40m	E19	18.01.07
Sky Blu	89272 **8917**	S74°47.53	W071°29.37	1578m	E29	16.12.06
Fossil Bluff	89065 **8920**	S71°19	W068°17	66m	E23	09.12.06

Near-realtime display



Skiway AWS

- A non-transmitting AWS logger was installed near to Rothera.
- Comparisons of SR50 snow ranging sensor with snowstake array, measured weekly.

Future plans

- BAS has purchased 2 more Campbell AWS units.
- These are based on CR1000 loggers with ST-20 ARGOS transmitters.
- One will be installed at Patriot Hills, this will have a WMO ID.
- One will be installed on the West side of Adelaide Island.
- We will be installing Iridium modems at Butler Island and Limbert.

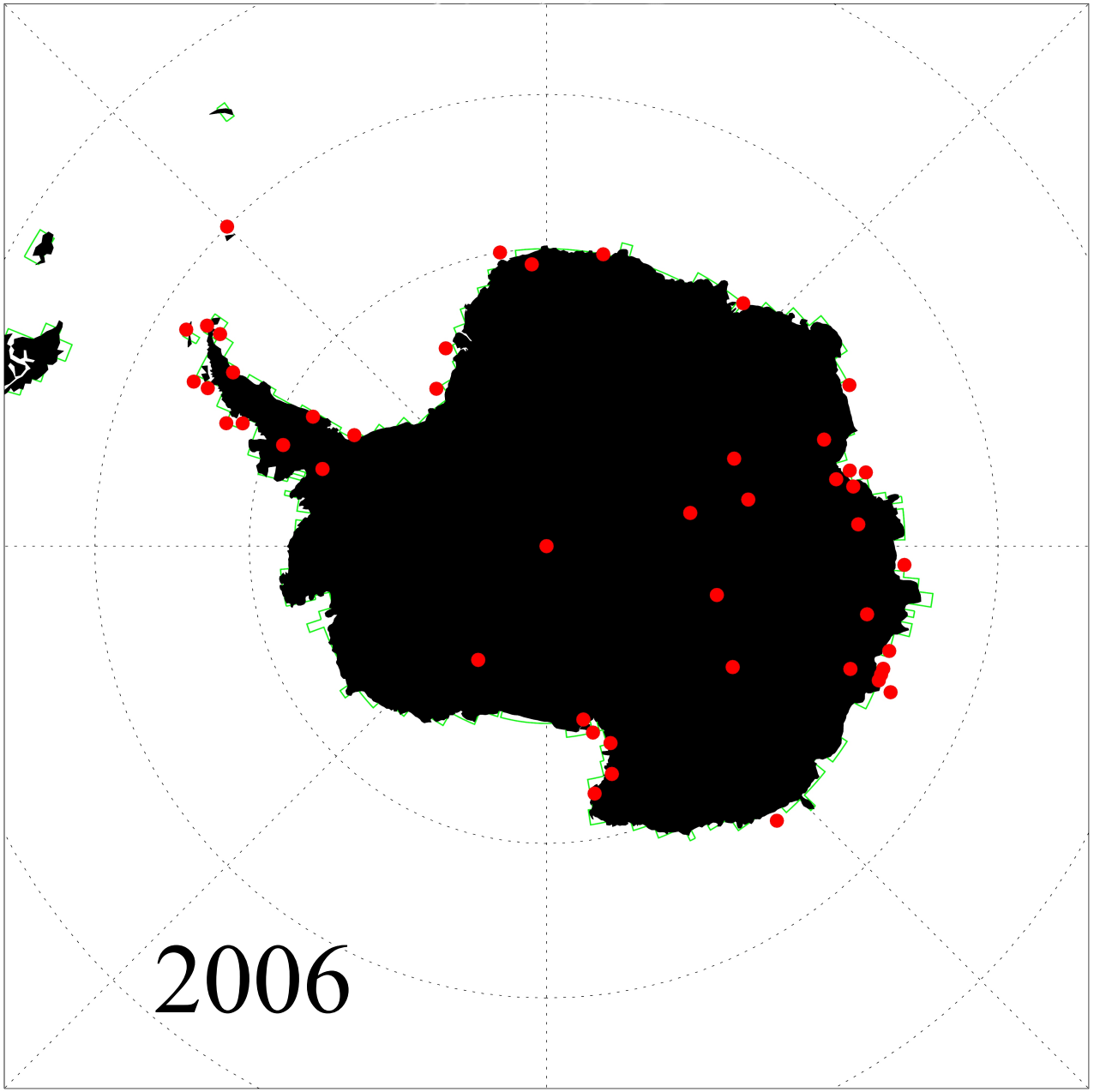
Click on an area to enlarge

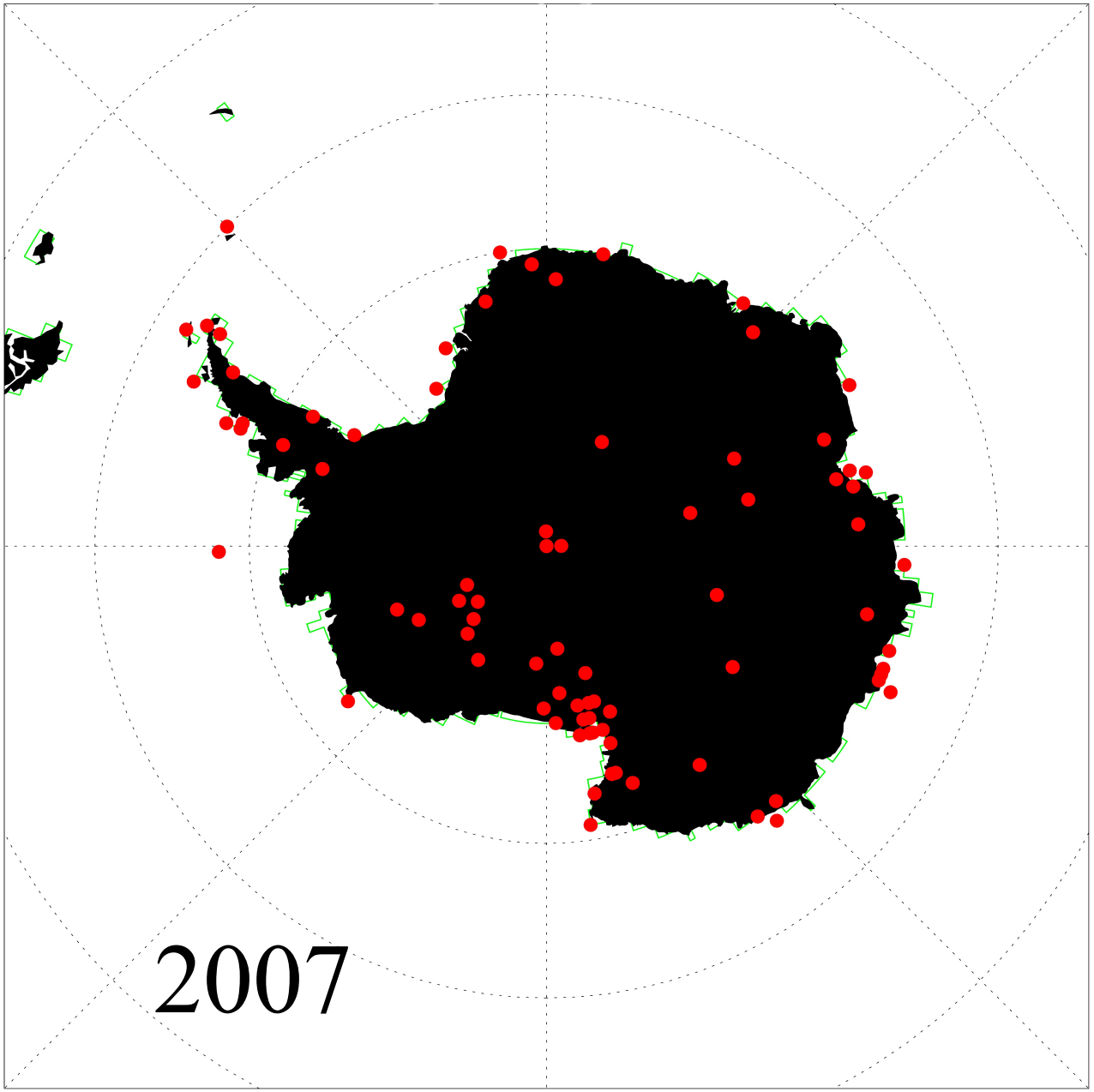
Iridium system

- The unit costs about £1500 and cost £150 per year to operate.
- The unit has an iridium modem, an antenna and a watchdog box that has been built at BAS.
- Data will be downloaded every week and then a final CLIMAT message produced every month.

Ask not what the AMRC can do for you - ask what you can do for the AMRC

- ARGOS are still not transmitting Wisconsin AWS data on the GTS.
- Data from all of the Wiscoinsin AWS are being processed at BAS to produce either SYNOP message for stations with a WMO ID or SYNOP MOBIL messages for the ones without WMO IDs


2006


2007

GCOS monitoring

- BAS is carrying out the GCOS monitoring for Antarctica.
- This includes the monitoring of the SYNOP and TEMP messages that go out on the GTS and also the CLIMAT and CLIMAT TEMP messages.
- Internal consistency checks SYNOPS and CLIMAT messages and TEMP and CLIMAT TEMP messages.

Latest valid CLIMAT messages received at BAS

Last run on 2007-06-12 at 10:56

ID	Year	Month	Station pressure	MSL pressure	Temperature
61997	2007	05	-999.0	1000.9	3.8
61998	2007	05	-999.0	989.2	3.3
68906	2007	03	1010.2	1016.7	14.8
68994	2007	05	999.7	1002.6	4.0
88889	2007	05	997.9	1006.8	-999.0
88900	2007	05	999.4	999.7	0.1
88903	2007	05	996.9	997.1	-1.7
88963	2007	05	998.8	1000.2	-9.5
88968	2007	05	998.7	1000.2	-4.4
89002	2007	05	987.7	993.0	-18.0
89004	2007	04	890.2	-999.0	-16.1
89009	2007	05	685.2	-999.0	-54.9
89022	2007	05	989.3	992.6	-27.4
89034	2007	05	961.8	995.4	-16.9
89050	2007	04	989.7	991.6	-3.8
89053	2007	05	998.5	992.7	-4.6
89054	2007	05	997.8	1000.1	-4.4
89055	2007	05	975.0	1000.8	-13.8
89056	2007	05	993.7	999.1	-4.7
89058	2004	02	997.5	999.0	1.7
89059	2007	05	997.7	999.0	-5.5
89061	no	data	ever	received	
89062	2007	05	991.6	995.5	-3.2
89063	2007	04	989.3	990.7	-2.1
89065	2007	04	982.7	991.0	-13.4
89066	2007	05	995.2	1002.2	-3.9
89108	no	data	ever	received	
89257	2007	04	994.8	1000.6	-35.1
89262	2007	04	994.6	997.0	-22.7
89266	2007	04	987.6	1000.1	-26.9
89272	2007	04	806.7	-999.0	-24.0
89324	2007	04	814.2	-999.0	-25.2
89327	no	data	ever	received	
89329	no	data	ever	received	
89345	2007	04	885.1	-999.0	-999.0
89376	2007	04	981.3	-999.0	-33.2
89377	no	data	ever	received	

Latest valid CLIMAT TEMP messages received at BAS

Last run on 2007-06-12 at 10:56

ID	Year	Month	g	Number of levels	100hPa height	100hPa temperature
61998	2007	05	2	8	15786	-56.1
68906	2007	04	2	10	16225	-60.8
68994	2007	04	1	9	16150	-59.0
88889	2007	05	3	9	15844	-57.2
89002	2007	05	2	9	15157	-65.3
89009	2007	01	2	27	15770	-42.2
89022	2007	05	2	9	15143	-67.0
89055	1996	01	2	9	15948	-45.7
89062	2007	05	2	7	15356	-62.1
89512	2007	01	1	12	15791	-44.9
89532	2007	05	1	9	15183	-65.3
89564	2007	05	1	8	15221	-64.0
89571	2007	05	1	8	15234	-64.2
89592	2007	01	1	10	15882	-45.1
89611	2007	05	1	9	15388	-61.7
89625	no	data	ever	received		
89642	2007	04	1	8	15597	-53.7
89662	no	data	ever	received		
89664	1991	04	1	9	15540	-50.3
94998	2007	05	1	9	15825	-57.1

Values for g equate to the following times being used to calculte the CLIMAT TEMP data:

1 = 0000 UTC

2 = 1200 UTC

3 = 0000 and 1200 UTC

4 = 0600 UTC

5 = 1800 UTC

6 = 0600 and 1800 UTC

7 = 0000, 1200 and either 0600 or 1800 UTC

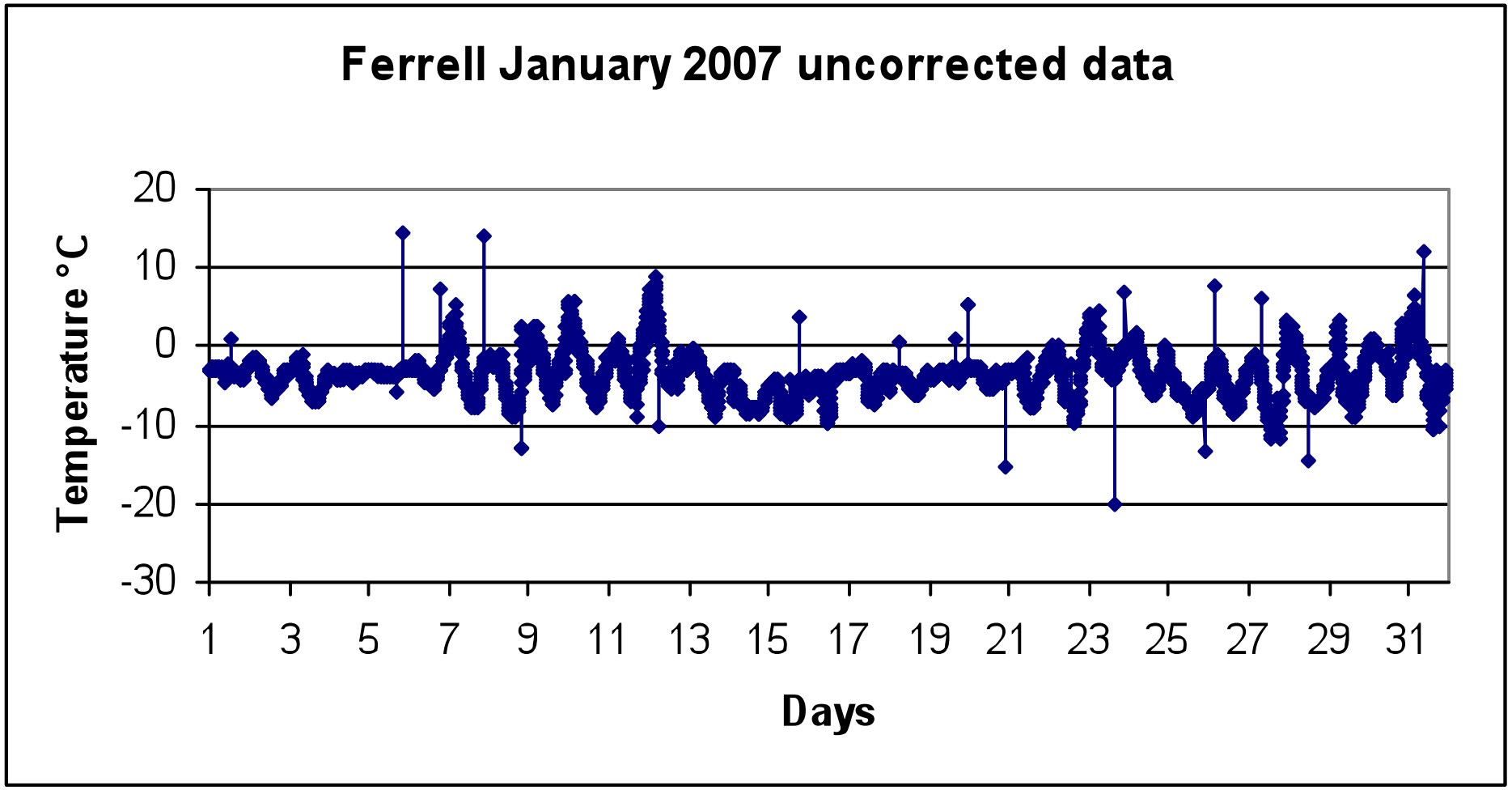
8 = 0600, 1800 and either 0000 or 1200 UTC

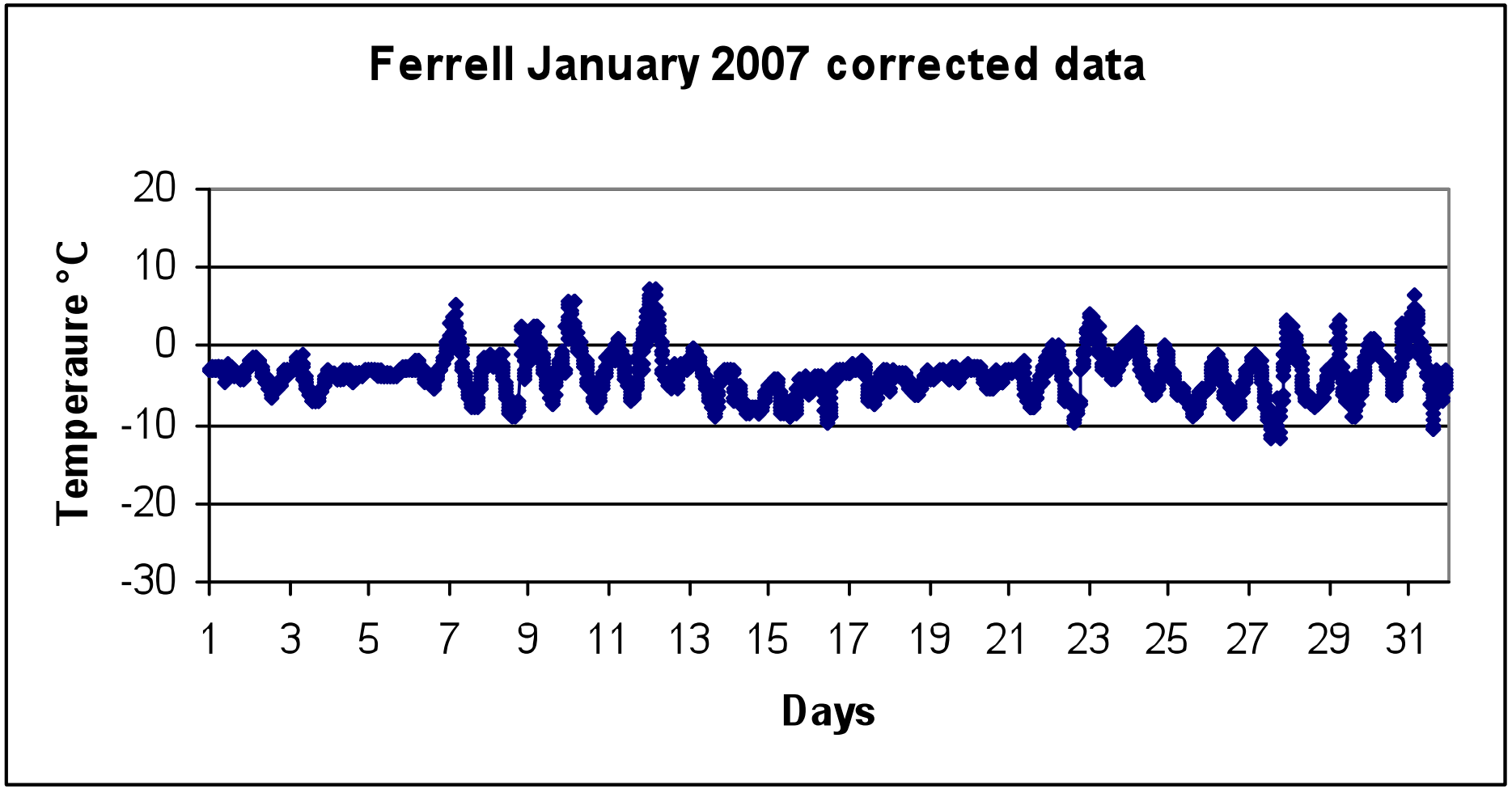
Provisional CLIMAT data from Anatarctic automatic weather stations

Final values will be available at the University of Wisconsin website

after intensive quality control has been carried out

Year	Month	WMO Number	Station Pressure	MSL Pressure	Temperature	Temperature Standard Deviation	Max Temperature	Min Temperature	Vapour Pressure	Days missing Pressure	Days missing Temperature	Tn0Tn0	Tx0Tx0	f10f10	f20f20	f30f30	Max Daily Mean Temperature	Date of Max Temperature	Mi M Tem
2007	01	89065	980.9	988.7	0.2	1.7	2.6	-2.1	4.8	01	00	26	01	00	00	00	5.2	17	
2007	01	89108	700.2	-999	-23.9	2.4	-20.9	-26.2	0.4	00	00	31	31	02	00	00	-20.1	14	
2007	01	89257	984.9	989.9	-4.2	4.0	-1.6	-8.8	3.6	00	00	31	18	03	00	00	0.5	16	
2007	01	89262	989.4	991.6	-0.7	1.4	1.5	-2.9	5.1	12	12	30	16	01	00	00	1.5	23	
2007	01	89266	963.9	975.0	-1.9	2.6	2.6	-4.9	3.9	00	00	29	10	01	00	00	4.6	25	
2007	01	89269	963.3	964.2	2.4	1.3	5.0	0.7	3.1	16	14	17	14	06	02	00	5.3	17	
2007	01	89272	809.9	-999	-10.5	3.1	-6.6	-14.9	2.2	00	00	31	29	08	00	00	-3.4	17	
2007	01	89314	825.6	-999	-9.7	2.5	-6.4	-12.2	2.2	00	00	31	31	19	00	00	-3.0	10	
2007	01	89324	819.1	-999	-9.2	2.4	-4.7	-12.6	-999	00	00	31	27	10	00	00	-2.3	11	
2007	01	89327	959.2	987.0	-1.9	1.0	0.4	-3.1	-999	00	00	31	18	00	00	00	0.4	29	
2007	01	89329	877.8	984.8	-8.4	2.2	-5.3	-10.7	2.6	00	00	31	30	03	00	00	-3.9	10	
2007	01	89332	926.1	987.6	-6.1	2.4	-1.9	-9.8	2.9	00	00	31	23	04	00	00	-1.4	09	
2007	01	89345	892.1	968.5	-6.8	1.8	-0.4	-13.1	2.2	00	00	31	17	02	00	00	-2.4	20	
2007	01	89376	984.9	991.7	-6.2	1.7	-1.3	-9.7	1.8	00	00	31	20	04	00	00	-3.7	17	
2007	01	89377	986.3	989.8	-2.7	1.9	2.5	-6.5	3.1	15	15	31	17	00	00	00	-0.1	28	
2007	01	89667	991.9	992.8	-1.3	1.5	3.6	-5.8	4.1	00	00	31	05	11	02	00	1.8	12	
2007	01	89768	885.3	987.4	-8.0	2.2	-5.2	-11.2	2.3	00	00	31	29	17	01	00	-2.4	11	
2007	01	89769	986.8	992.2	-3.4	1.4	1.0	-7.7	3.3	00	00	31	16	17	00	00	-0.8	10	
2007	01	89799	681.1	-999	-25.7	2.5	-22.4	-28.1	0.4	00	00	31	31	04	00	00	-19.3	01	
2007	01	89828	653.8	-999	-27.6	2.6	-20.0	-36.7	-999	00	00	31	31	01	00	00	-21.6	11	
2007	01	89834	813.5	-999	-13.4	1.9	-9.9	-17.1	-999	00	00	31	31	29	07	00	-9.3	30	
2007	01	89864	983.3	993.0	-1.8	0.9	2.0	-4.7	2.8	00	00	31	01	07	00	00	-0.2	12	
2007	01	89866	978.7	991.9	-0.2	1.4	2.9	-3.4	-999	00	00	31	01	07	00	00	2.8	11	
2007	01	89868	982.1	988.9	-5.9	1.5	-1.4	-9.8	1.9	00	00	31	23	04	00	00	-3.7	11	
2007	01	89869	984.8	992.8	-4.1	1.8	1.1	-7.9	3.5	00	00	31	12	07	00	00	-0.6	11	
2007	01	89872	986.2	991.9	-3.7	1.4	0.6	-7.2	4.0	00	00	31	17	14	00	00	-1.0	23	
2007	01	89873	984.7	992.1	-3.6	2.6	0.6	-7.5	3.1	00	00	31	13	09	00	00	-0.2	17	
2007	01	89879	979.4	983.0	1.7	1.4	5.5	-1.0	-999	00	00	27	00	00	00	00	6.5	11	
2007	02	89065	979.6	987.4	-2.9	2.5	-0.1	-5.3	4.1	00	00	28	15	05	00	00	0.9	12	
2007	02	89108	690.9	-999	-39.0	6.9	-36.2	-40.9	0.1	00	00	28	28	00	00	00	-25.2	01	


Ferrell January 2007 uncorrected data
Temperature °C
20
10
0
-10
-20
-30
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
Days


Ferrell January 2007 corrected data
Temperaure °C
20
10
0
-10
-20
-30
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
Days

READER

- The READER project has expanded so the current READER project is now Met READER and there is now an Ice READER with information about ice cores and snow pits and a Southern Ocean READER with information about ocean currents, salinity measurements, sea ice etc (but not biological samples).
- Met READER is continually being updated with data from the GTS or from the National Operators when it becomes available

ITASE: iceReader Home - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www2.umaine.edu/itase/content/icereader/

International Trans-Antarctic Scientific Expedition

Reports | Publications | Science Plans | Maps | Ice Reader

iceREADER

This data base, sponsored by the Scientific Committee on Antarctic Research, (SCAR), will host basic data from ice cores of the Antarctic Continent. The goal is to compile a complete list of cores by name, site, location and as much other information as possible.

Core Map Core list

Additional sites sponsored by SCAR

Ocean Reader Antarctic Sea Ice Processes & Climate Control Met Reader

As we build this data set, please contact us with additions, corrections and comments.
Web Master: annz at maine.edu

Done

Start | Nove... | LabVIEW | Untitl... | Exceed | xterm | Exce... | xterm | aws ... | Micro... | psd-... | ITAS... | LabV... | 10:56

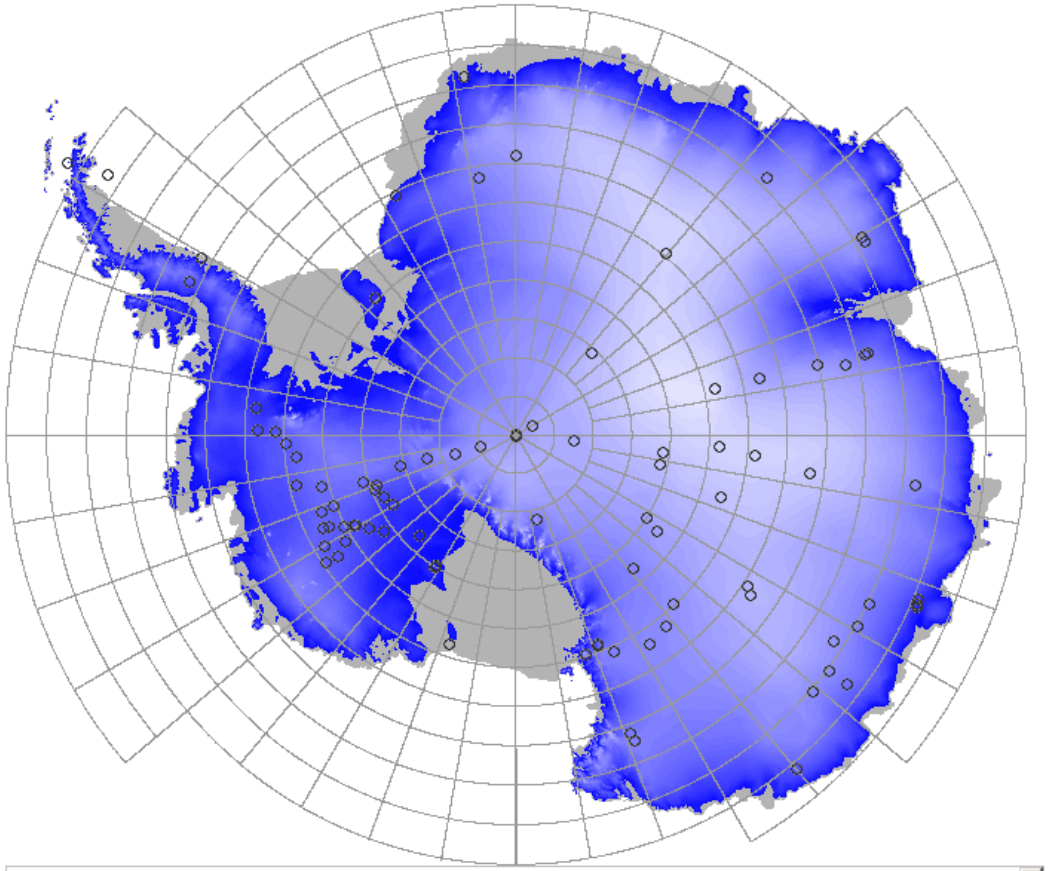
ITASE: iceReader Home - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www2.umaine.edu/itase/content/icereader/showcores.php

iceREADER

Hover over the cores below to view names. Map can also be viewed without latitude and longitude references.



Berkner Isl Byrd Collins Ice Cap Concordia Station CWA(A) CWA(B)
CWA(C) CWA(D) DE08/2 Dolleman Isl Dome B R. B Dome B Dome C
Dome Fuji Dominion Range DML DML 3 DML 5 DSSW19K DT001 (2) DT085
DT263 DT801 Dumont D'Urville Dyer Plateau Fra'00 1 Fra'00 2 Fra'00 3
Fra'00 4 GD03 GD06 GD09 GD12 GD15 GD17 GF01 GF12 Halley

Core Map Core list (dynamic)

As we build this data set, please contact us with additions, corrections and comments.

Done

Start Nove... LabVIEW Untitl... Exceed xterm Exce... xterm aws ... Micro... psd-... ITAS... LabV... 10:57

International Trans-Antarctic Scientific Expedition

Core: CWA(A)

Longitude	119° 17′ 8″ W
Longitude (decimal)	119.2855
Latitude	82° 22′ 2″ S
Latitude (decimal)	82.3671
Elevation (m)	950

Depth (m)	96
Sample (cm)	3 & 40
Time Period (Year AD)	1740-1994
Mean Acc. Rate (gcm-2yr-1)	14.5
Species Analyzed	Na, K, Mg, Ca, Cl, NO_3, SO_4

Core Map Core List

Southern Ocean READER

Southern Ocean READER is a portal for links to temperature, salinity and ocean current data from the Southern Ocean.

READER: REference Antarctic Data for Environmental Research

- Temperature (All) is located under temperature
- Temperature with salinity is located on the salinity page
- Currents are located on the currents page
- On the Extras page there is a table of specific links to the AADCP, and a table of gridded data sets

These are only the datasets that we are currently aware of. If you know of any others that you feel we should include then please Email us

Also if you should encounter any broken links or errors on the website do not hesitate to Email us

This portal is the first phase of Southern Ocean data management to be conducted via the auspices of the SCAR Antarctica in the Global Climate System (AGCS) Scientific Research Programme.

Questions

- **src@bas.ac.uk**
- **cmmo@bas.ac.uk**
- **www.antarctica.ac.uk/**
- **www.antarctica.ac.uk/met/READER/**
- **www.antarctica.ac.uk/met/jds/met/SCAR_oma.htm**