Overview of service opportunities and requirements for Antarctica

Steve Colwell

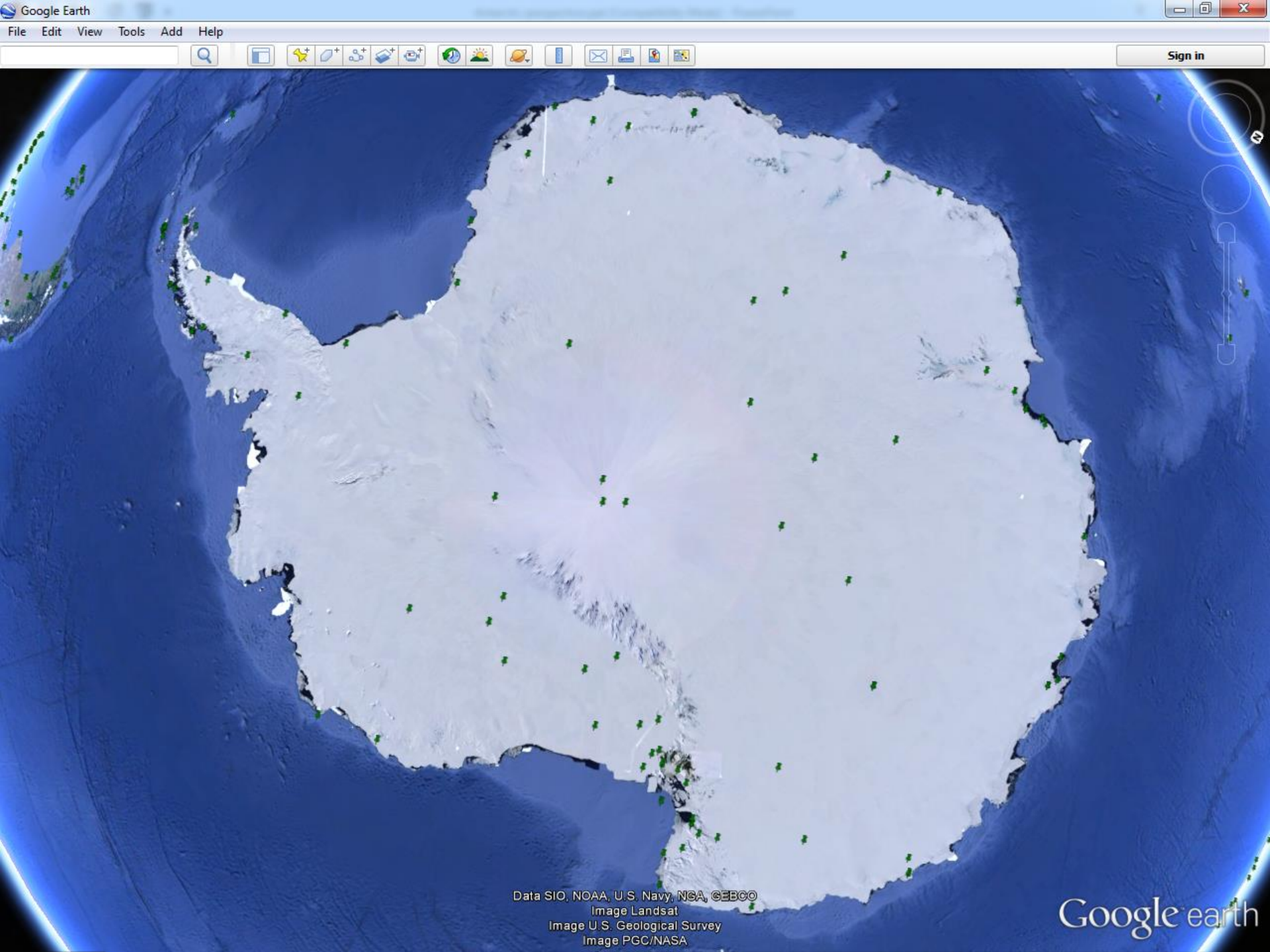
British Antarctic Survey

Overview

- Current and previous locations where meteorological data has been collected.
- The archiving and monitoring of Antarctic data.
- READER
- Current forecasting products that are available for Antarctica.
- What is needed.

Antarctica VS Europe Compare

Antarctica (14,000,000 km²) is **1.38** times as big as Europe (10,180,000 km²).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Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
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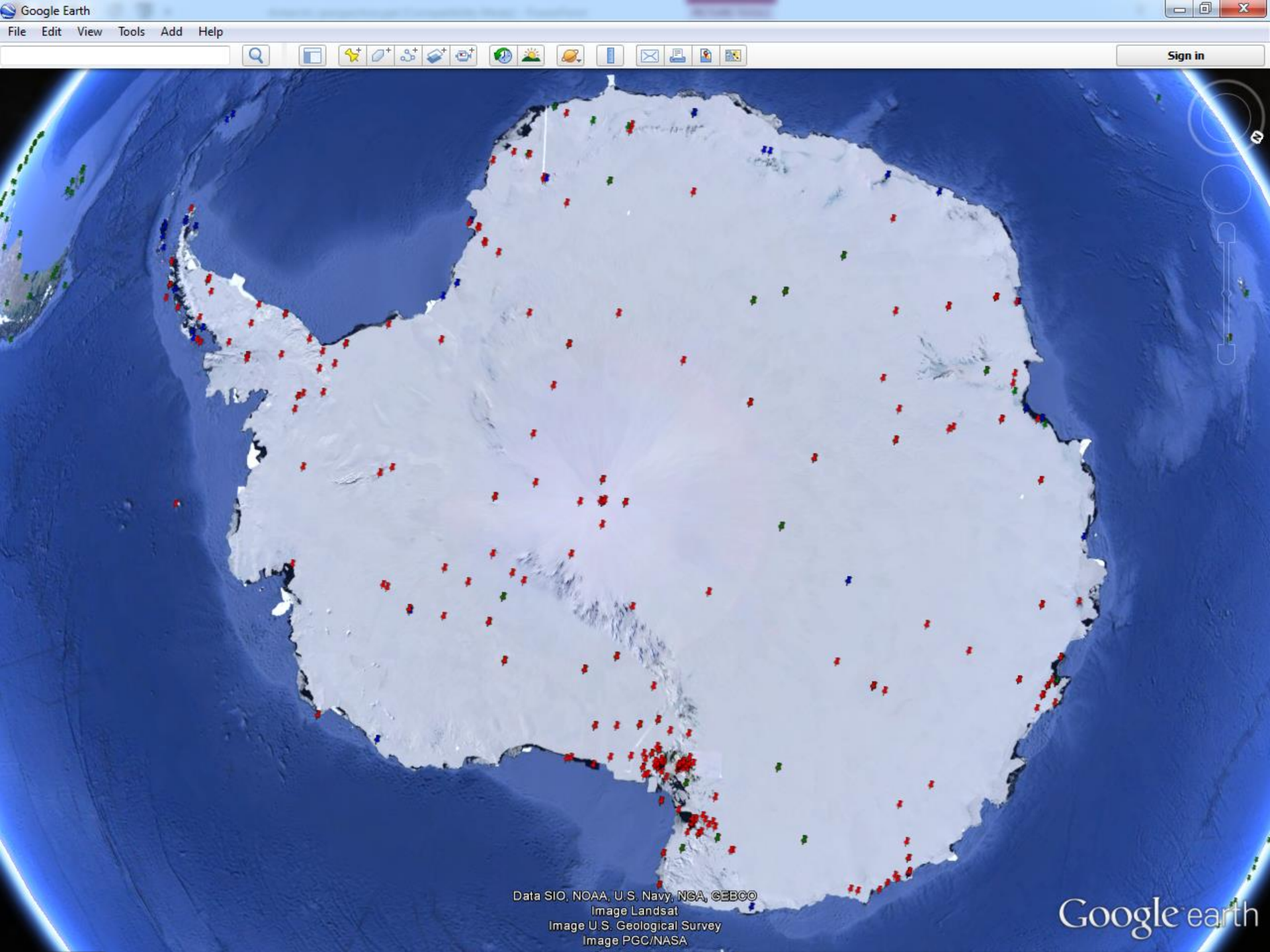
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Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat
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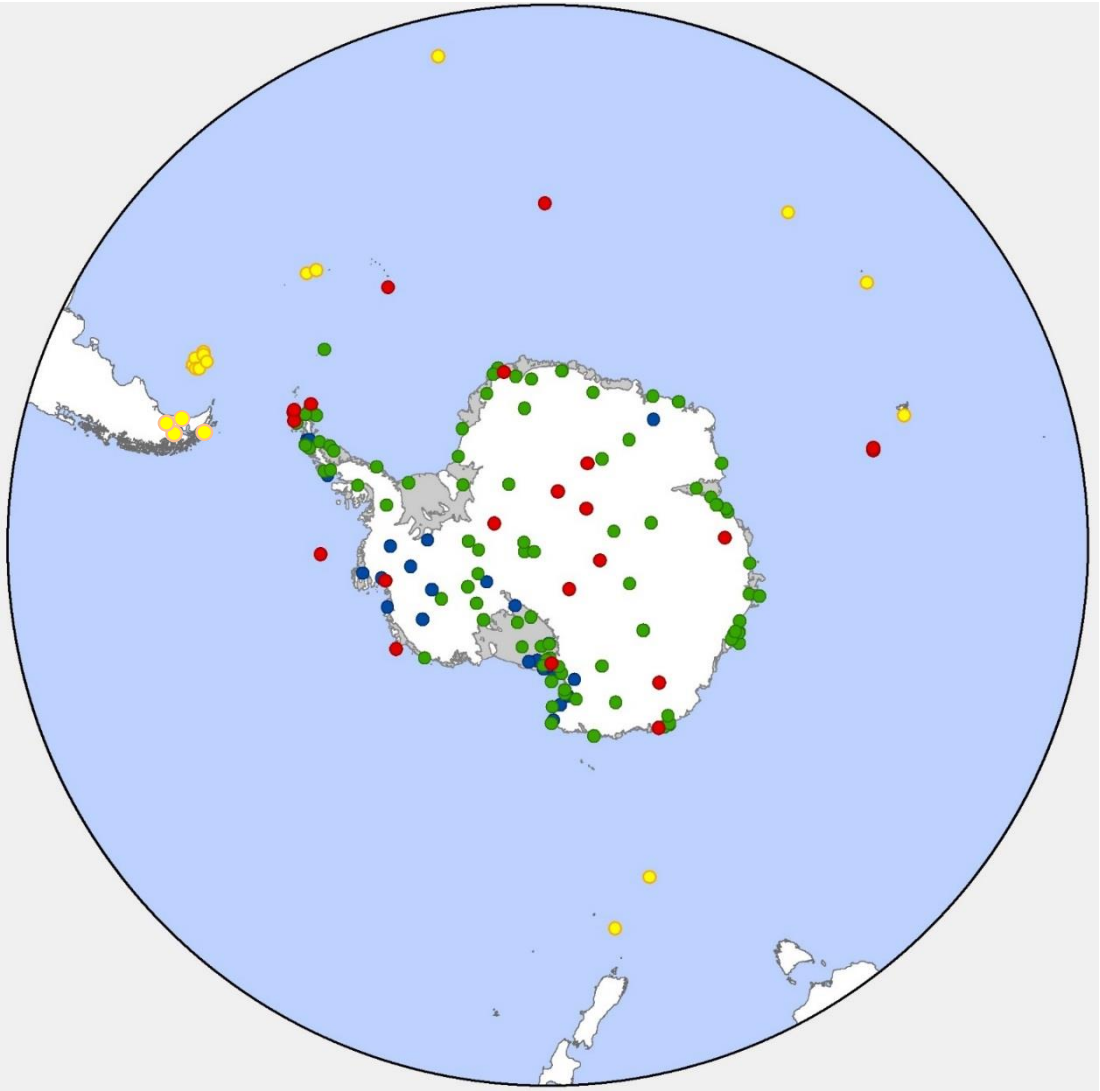
Google earth

AntON

- AntON is the Antarctic Observing Network
  - It is a list of the staffed and automatic weather stations that are currently in operation in Antarctica.
  - It is updated on a regular basis when new details about stations are received like a new AWS installations, removals or failures.
  - A subset of AntON makes up the Antarctic GSN.
- The British Antarctic Survey carries out the GCOS monitoring for Antarctica and is also a DCPC for Antarctica.

AntON stations



Green: AntON stations; Blue: AntON associated stations; Yellow: AntON island station; Red: stations no longer reporting in real-time

Scientific Committee on Antarctic Research

World Meteorological Organization
Weather • Climate • Water

Web Page for

SCAR Expert Group on Operational Meteorology in the Antarctic

& WMO EC-PHORS Antarctic Task Team

The SCAR Expert Group on Operational Meteorology in the Antarctic is a sub group of the SCAR Standing Scientific Group on Physical Sciences (SSG/PS). The Chairman of the Expert Group is Steve Colwell (S.Colwell@bas.ac.uk). If you would like to join the Group please contact him. The Antarctic Task Team is a sub group of the WMO Executive Council team on Polar and High Mountain Observations, Research and Services. The Chair of the ATT is Steve Colwell. Membership is by invitation. Jon Shanklin (J.Shanklin@bas.ac.uk), former chair of the Group and the ATT, currently maintains these pages.

Latest news:

1. 2019 August 9 - Around ten fishing vessels are at work, though only half have been picked up by Global Fishing Watch
2. 2019 July 1 - Around ten fishing vessels are at work.
3. 2019 June 3 - All research ships have now left Antarctic waters. Around ten fishing vessels are still at work.
4. 2019 May 3 - Most research ships have now left Antarctic waters. Around a dozen fishing vessels are still at work.
5. 2019 April 5 - 33 ships have reported weather observations, 122 identified ships have not, with further unidentified ships present
6. 2019 March 4 - 32 ships have reported weather observations, 118 identified ships have not, with further unidentified ships present
7. 2019 February 8 - 30 ships have reported weather observations, 112 identified ships have not, with further unidentified ships present
8. 2019 January 4 - 22 ships have reported weather observations, 82 identified ships have not, with further unidentified ships present
9. 2018 December 3 - 11 ships have reported weather observations, 49 identified ships have not, with further unidentified ships present

General

Old News	Members of SCAR EG-OMA and WMO ATT (Updated 2017 July 6)
Details of how to register for the .aq (Antarctic) domain.	Antarctic Station details (Updated 2017 February 3 - changes are highlighted)
WMO AntON listing (Updated 2017 February 3)	

Monitoring

UK Met Office global monitoring	
ECMWF global monitoring	NCDC data list
AMPS usage stats (Pressure; site also gives temperature, humidity & wind)	
Operational GSN stations with missing CLIMAT messages in the last 12 months (2018 August to 2019 July, updated 2019 September) are: 89564 (2019 February), 89571 (2019 February), 89573 (2019 February), 89577 (2019 February, March), 89611 (2019 February), 89625 (2018 October), 89662 (2018 November, 2019 April, May) and 89879 (2019 June, July). Non operational GSN stations are: 68992 and 89327. **Please check our GCOS AntON CLIMAT and SYNOP monitoring if your station is listed here and resend**	The first six stations to submit CLIMAT reports for 2019 August were Neumayer, Bellingshausen, Novolazarevskaya, Progress, Mirnyj and Vostok. WMO no longer require distribution of the CLIMAT TEMP message and monitoring of these has ceased. See the TEMP monitoring below for performance

Monitoring

UK Met Office global monitoring	
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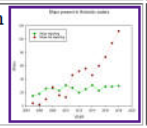
BAS GTS monitoring	
BAS GCOS AntON monitoring: Where we see problems with receipt of SYNOP, TEMP or CLIMAT messages stations or operators will be notified by email. Several AWS experience problems with low battery voltages restricting real-time transmissions during the winter.	All GUAN stations are now carrying out at least some radiosonde flights each month. Several stations experience problems with balloons bursting early during the winter due to low stratospheric temperatures.
• AntON CLIMAT monitoring in 2019 (automated) • AntON CLIMAT monitoring in 2018 (automated) • AntON CLIMAT monitoring in 2017 (automated) • AntON CLIMAT monitoring in 2016 (automated) • AntON CLIMAT monitoring in 2015 (manual) / 2015 (automated) • AntON CLIMAT monitoring in 2014 • AntON CLIMAT monitoring in 2013 • AntON CLIMAT monitoring in 2012 • AntON CLIMAT monitoring in 2011 • ABCN CLIMAT monitoring in 2010 • ABCN CLIMAT monitoring in 2009 • ABCN CLIMAT monitoring in 2008 • ABCN CLIMAT monitoring in 2007 • ABCN CLIMAT monitoring in 2006	**If the SYNOP or TEMP message percentage given here is lower than you think it should be, please check your GTS routing. Prior to 2015, TEMP monitoring is included with the SYNOP reports.** • AntON SYNOP monitoring in 2019 (automated), • AntON SYNOP monitoring in 2018 (automated), • AntON SYNOP monitoring in 2017 (automated), • AntON SYNOP monitoring in 2016 (automated), • AntON SYNOP monitoring in 2015 (manual) / 2015 (automated) • AntON SYNOP monitoring in 2014 • AntON SYNOP monitoring in 2013 • AntON SYNOP monitoring in 2012 • AntON SYNOP monitoring in 2011 • ABCN SYNOP monitoring in 2010 • AntON TEMP monitoring 2019 (automated) • AntON TEMP monitoring 2018 (automated) • AntON TEMP monitoring 2017 (automated) • AntON TEMP monitoring 2016 (automated) • AntON TEMP monitoring 2015 (automated)

Ships

Ships reporting in 2004/05	Ships reporting in 2005/06
Ships reporting in 2006/07	Ships reporting in 2007/08
Ships reporting in 2008/09	Ships reporting in 2009/10
Ships reporting in 2010/11	Ships reporting in 2011/12
Ships reporting in 2012/13	Ships reporting in 2013/14
Ships reporting in 2014/15	Ships reporting in 2015/16
Ships reporting in 2016/17	Ships reporting in 2017/18 [Updated 2018 June 22]
Ships reporting in 2018/19 [Updated 2019 July 1] The graph shows the position at the beginning of February. 	Ships reporting in 2019/20 [None yet!]
Sign up to send met reports through Yotreps	Latest list of ships with significant errors/biases in their reports

Performance of the Antarctic Observing Network (AntON) CLIMAT

Surface stations

This chart shows the status of CLIMAT messages receved on the GTS during 2019 for stations in the EC-PHORS zone of interest

M = message on GTS, B = message generated from SYNOP by BAS both are displayed in green.

Yellow = NIL message received, Red = No CLIMAT message recieved, both of these boxes have the percentage of synoptic reports received for the main synoptic hours displayed.

NOTE monitoring does not distinguish between problems with generation and transmission of messages.

WMO no	Station name	Comments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
61997	Isle Crozet	GSN station	M	M	M	M	M	M	M	M	0			
61998	Isle Kerguelen	GSN station	M	M	M	M	M	M	M	M	100			
68906	Gough Island	GSN station	M	M	M	M	M	M	M	M	84			
68992	Bouvetoya	GSN station	0	0	0	0	0	0	0	0	0			
68994	Marion Island	GSN station	M	M	M	M	M	M	M	M	97			
88870	Mount Byron		B	B	71	87	B	B	B	B	85			
88878	Pebble Island		B	B	B	86	B	0	73	B	82			
88881	Mount Kent		B	B	B	70	20	0	0	0	0			
88883	Weddell Island		B	30	41	86	B	0	0	0	80			
88889	Mount Pleasant Airport	GSN station	B	B	B	87	B	B	B	B	85			
88892	Sapper Hill		0	0	0	0	0	0	0	0	0			
88894	Mount Alice		B	B	B	86	B	B	B	B	88			
88897	Sea Lion Island		B	B	71	20	0	0	0	0	0			
88900	Bird Island		M	M	M	M	M	M	M	M	M			
88903	Grytviken	GSN station	M	M	M	M	M	M	M	M	M			
88986	South Thule Island		0	0	0	0	0	0	0	0	0			
88963	Esperanza	GSN station	M	M	M	M	M	M	M	M	M			
88968	Orcadas	GSN station	M	M	M	M	M	M	M	M	M			
89002	Neumayer	GSN station	M	M	M	M	M	M	M	M	M			
89003	Halvfarryggen EP11		0	0	0	0	0	0	0	B	56			
89004	SANAE	GSN station	M	M	M	M	M	M	M	97	98			
89009	Amundsen-Scott	GSN station	M	M	M	M	M	M	M	M	M			
89011	Soerasen		B	89	B	B	B	0	70	56	B			
89013	Baldrick AWS		M	M	M	M	M	M	M	M	82			
89014	Nordenskiold		B	43	29	30	26	0	28	30	25			
89022	Halley	GSN station	M	M	M	M	M	M	M	M	M			
89034	Belgrano II		M	M	M	M	M	M	M	M	M			
89047	Filchner		B	B	B	B	B	0	B	B	B			
89049	AGO-2	Failed	0	0	0	0	0	0	0	0	0			
89050	Bellingshausen	GSN station	M	M	M	M	M	M	M	M	M			
89053	Jubany		M	M	M	M	M	M	M	M	M			
89054	Dinamet		0	0	0	0	0	0	0	0	0			
89055	Marambio	GSN station	M	M	M	M	M	M	M	M	M			
89056	Frei	GSN station	M	M	M	M	M	M	M	M	M			
89057	Arturo Prat		B	B	B	B	B	B	B	B	B			
89058	Great Wall		M	87	M	M	M	M	M	M	M			
89059	O'Higgins		M	M	M	M	M	M	M	M	M			
89061	Palmer		M	M	M	M	M	M	M	M	100			
89062	Rothera	GSN station	M	M	M	M	M	M	M	M	M			
89063	Vernadsky	GSN station	M	M	M	M	M	M	M	M	M			
89064	Juan Carlos		0	0	0	0	0	0	0	0	0			
89065	Fossil Bluff	GSN station	M	M	M	M	M	M	M	M	72			
89066	San Martin		M	M	M	M	M	M	M	M	M			
89079	Criosfera 1		0	0	0	0	0	0	0	0	0			
89087	Thiel Mountains		0	0	0	0	0	0	0	0	0			
89108	Henry		15	M	M	M	M	M	M	M	M			

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legacy.bas.ac.uk/met/jds/met/
https://legacy.bas.ac.uk/met/jds/met/synop_2019.html

Performance of the Antarctic Observing Network (AntON) SYNOP

Surface stations

This chart shows the status of SYNOP messages for the main hours on the GTS during 2019, with green representing good performance, light green representing less than 90% of expected messages (acceptable, but not adequate for CLIMAT), yellow less than 80% and amber less than 50%.

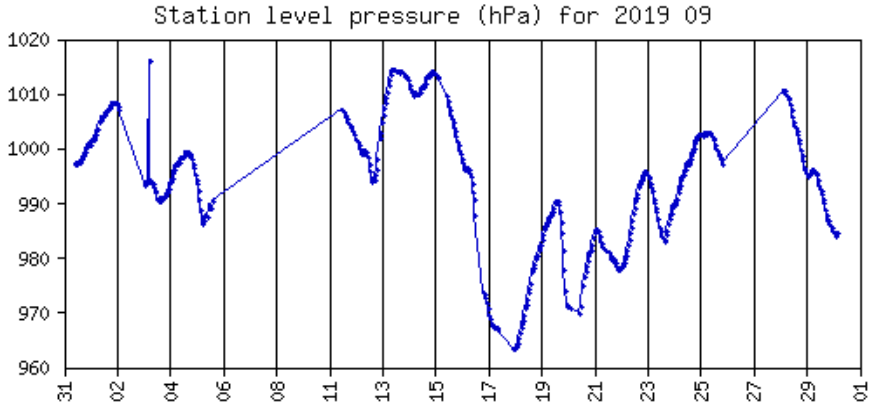
If less that 30% are found then the number of days in the month that observations were recieved is displayed which may have been on non main synoptic hours which occurs mainly for AWS transmitting via Argos.

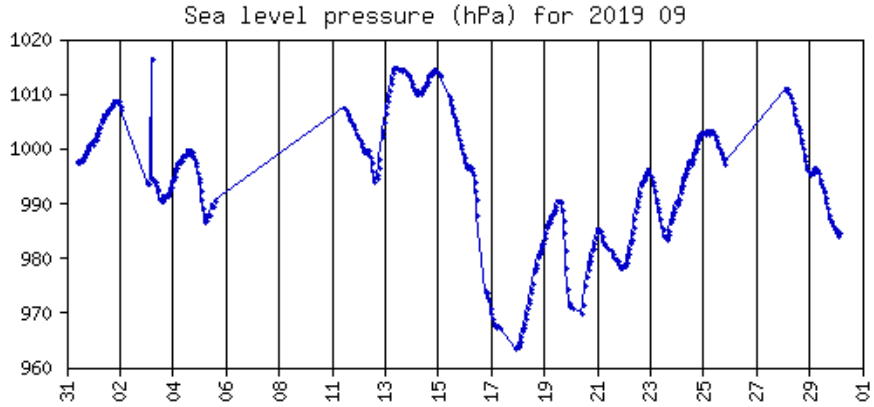
When the number of days is displayed a D is shown before the number, greater than 25 days is displayed in green, light green for between 20 and 25 days, yellow for between 10 and 20 days, amber for between 5 and 10 days and red for less than 5 days.

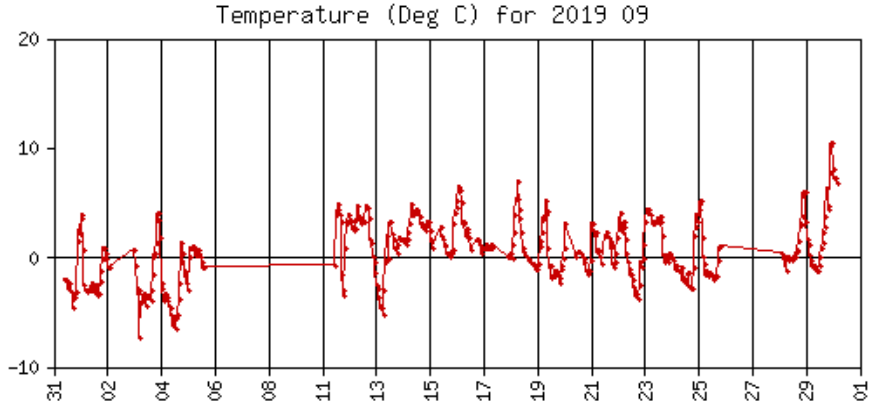
WMO no	Station name	Comments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
61997	Isle Crozet	GSN station	0	D 5	0	0	0	D 1	0	0	0			
61998	Isle Kerguelen	GSN station	100	99	97	95	100	97	100	96	100			
68906	Gough Island	GSN station	91	83	86	83	85	D 30	90	89	84			
68992	Bouvetoya	GSN station	0	0	0	0	0	0	0	0	0			
68994	Marion Island	GSN station	87	91	87	95	78	D 30	98	95	97			
88870	Mount Byron		93	92	71	87	84	D 30	89	93	85			
88878	Pebble Island		94	93	88	86	84	D 30	73	92	82			
88881	Mount Kent		95	92	93	70	0	0	0	0	0			
88883	Weddell Island		91	30	41	86	93	D 15	0	0	80			
88889	Mount Pleasant Airport	GSN station	95	93	91	87	94	D 30	90	92	85			
88892	Sapper Hill		0	0	0	0	0	0	0	0	0			
88894	Mount Alice		95	94	91	86	95	D 30	89	95	88			
88897	Sea Lion Island		94	94	71	D 19	0	D 1	0	0	0			
88900	Bird Island		99	97	98	99	92	D 30	89	98	99			
88903	Grytviken	GSN station	96	82	93	91	89	D 30	95	87	66			
88986	South Thule Island		0	0	0	0	0	0	0	0	0			
88963	Esperanza	GSN station	95	98	97	99	100	D 30	99	96	93			
88968	Orcadas	GSN station	95	91	100	98	100	D 30	99	98	99			
89002	Neumayer	GSN station	100	99	100	100	100	D 30	100	98	100			
89003	Halvfarryggen EP11		0	0	0	0	0	0	0	0	56			
89004	SANAE	GSN station	93	92	99	74	86	D 30	98	97	98			
89009	Amundsen-Scott	GSN station	92	91	91	95	88	D 30	96	97	98			
89011	Soerasen		100	89	96	96	95	0	70	56	99			
89013	Baldrick AWS		82	83	81	85	85	D 29	85	81	82			
89014	Nordenskiold		97	43	D 31	30	D 24	D 30	D 31	30	D 29			
89022	Halley	GSN station	98	97	100	100	100	D 30	100	98	100			
89034	Belgrano II		97	95	96	98	98	D 30	99	97	98			
89047	Filchner		93	91	97	99	95	D 26	98	96	99			
89049	AGO-2	Failed	0	0	0	0	0	0	0	0	0			
89050	Bellingshausen	GSN station	100	99	100	100	99	D 30	100	98	100			
89053	Jubany		90	98	99	98	100	D 30	99	97	99			
89054	Dinamet		0	D 3	0	0	0	0	0	0	0			
89055	Marambio	GSN station	97	94	95	99	99	D 30	97	98	99			
89056	Frei	GSN station	99	95	99	93	100	D 30	97	98	100			
89057	Arturo Prat		95	99	98	99	100	D 30	99	97	100			
89058	Great Wall		100	87	93	98	98	D 28	100	93	64			
89059	O'Higgins		100	91	100	100	99	D 30	94	92	99			
89061	Palmer		99	94	98	99	98	D 30	100	98	100			
89062	Rothera	GSN station	100	99	100	99	99	D 30	99	96	99			
89063	Vernadsky	GSN station	100	95	97	95	97	D 30	95	98	100			

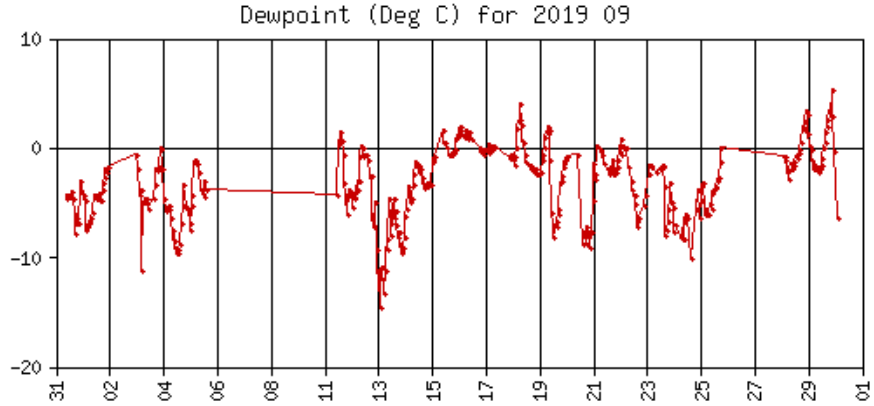
23 items
11:49
04/10/2019

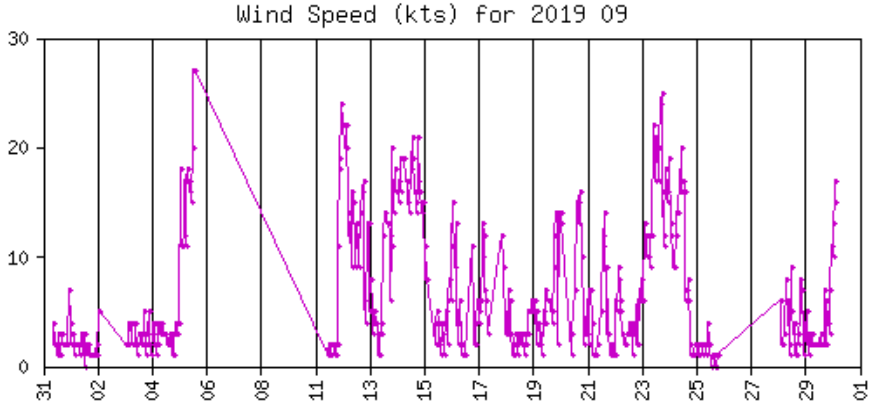
88903 (GRYTVIKEN) data for 2019 09

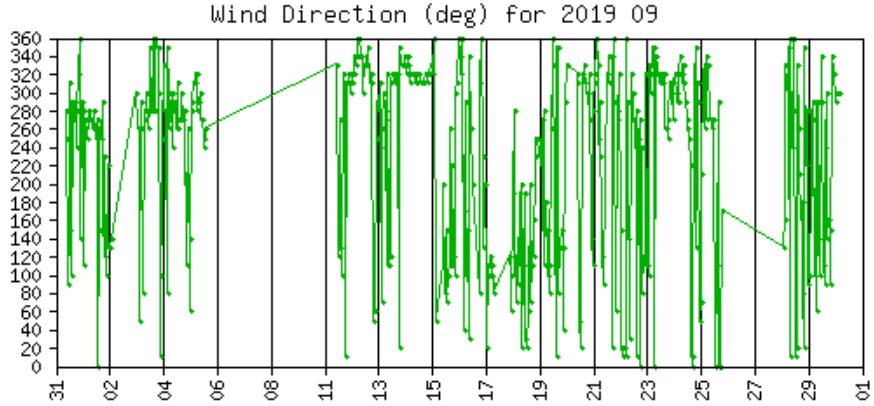












Performance of the Antarctic Observing Network (AntON) TEMP

Upper air stations

The monthly columns show the status of TEMP messages with data to 100 hPa (after quality control) on the GTS, with yellow representing less than 70% of expected messages, amber representing less than 40% and red less than 10% of messages. Stations are assessed against their published programme in WMO No 9, Vol A at the beginning of the year.

NOTE monitoring does not distinguish between problems with generation and transmission of messages. Monitoring is automated and may have errors and there are occasional breaks in the BAS GTS feed. The 100 hPa level is chosen as the minimum target level for GUAN stations, but balloon performance often degrades during the polar winter and not all flights reach this level.

WMO no	Station name	Hour	Comments	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
61998	Isle Kerguelen	12	GUAN station	0	3	0	0	0	0	0	0	0			
68906	Gough Island	00	GUAN station	100	89	87	80	77	76	12	0	0			
68906	Gough Island	12	GUAN station	83	82	77	83	77	60	9	0	0			
68994	Marion Island	00	GUAN station	64	67	83	60	77	80	80	67	66			
68994	Marion Island	12	GUAN station	87	71	74	63	70	53	54	64	76			
88889	Mount Pleasant Airport	00	GUAN station	100	96	90	80	83	96	93	103	93			
88889	Mount Pleasant Airport	12	GUAN station	25	7	12	20	3	3	9	6	10			
94998	Macquarie Island	00	GUAN station	93	92	96	86	90	90	90	87	93			
94998	Macquarie Island	06	GUAN station	0	0	0	0	0	0	0	0	0			
94998	Macquarie Island	12	GUAN station	90	100	96	86	93	86	87	90	100			
94998	Macquarie Island	18	GUAN station	0	0	0	0	0	0	0	0	0			
89002	Neumayer	06	GUAN station	83	42	0	0	0	0	0	0	0			
89002	Neumayer	00	GUAN station	74	42	0	0	0	0	0	0	0			
89002	Neumayer	12	GUAN station	77	67	87	66	64	86	83	70	56			
89002	Neumayer	18	GUAN station	70	57	0	3	0	0	0	3	10			
89009	Amundsen-Scott	00	GUAN station	87	75	90	83	67	26	22	22	60			
89009	Amundsen-Scott	12	GUAN station	96	78	6	13	0	0	0	6	3			
89022	Halley	00	GUAN station	51	32	0	0	0	0	0	0	0			
89022	Halley	12	GUAN station	51	28	0	0	0	0	0	0	0			
89055	Marambio	12	GUAN station	12	17	12	6	16	13	19	19	20			
89056	Frei	00		70	60	0	0	0	0	0	0	3			
89056	Frei	12		0	0	0	0	0	0	0	0	40			
89056	Frei	18		0	0	0	0	0	0	0	0	3			
89062	Rothera	12		67	53	54	36	58	46	64	45	53			
89512	Novolazarevskaya	00	GUAN station	0	0	0	0	0	0	0	0	0			
89512	Novolazarevskaya	12	GUAN station	0	0	0	0	0	0	0	0	0			
89532	Syowa	00	GUAN station	70	46	61	50	67	40	70	90	86			
89532	Syowa	06	GUAN station	93	42	0	0	0	0	0	0	0			
89532	Syowa	12	GUAN station	67	57	70	70	67	60	74	96	96			
89532	Syowa	18	GUAN station	64	0	0	0	0	0	0	0	0			
89564	Mawson	00	GUAN station	0	0	0	0	0	0	0	0	0			
89564	Mawson	12	GUAN station	67	71	67	66	41	46	74	87	83			
89571	Davis	00	GUAN station	100	92	100	86	96	96	100	93	96			
89571	Davis	06	GUAN station	0	0	0	0	0	0	0	0	0			
89571	Davis	12	GUAN station	93	100	96	93	100	93	100	96	96			
89571	Davis	18	GUAN station	0	0	0	0	0	0	0	0	0			
89592	Mirny	00	GUAN station	100	96	100	93	93	93	87	83	96			
89592	Mirny	12	GUAN station	100	53	0	0	0	0	0	0	0			
89611	Casey	00	GUAN station	100	100	100	93	93	90	100	93	96			
89611	Casey	06	GUAN station	0	0	0	0	0	0	0	0	0			
89611	Casey	12	GUAN station	100	100	93	83	87	83	100	87	96			
89625	Concordia	00		96	53	0	0	0	0	0	0	0			
89625	Concordia	06		45	0	0	0	0	0	0	0	0			
89625	Concordia	12		93	100	87	96	100	86	64	38	83			
89625	Concordia	18		48	0	0	0	0	0	0	0	0			
89642	Dumont d&#65533;Urville	00	GUAN station	19	17	35	36	16	13	9	38	90			
89642	Dumont d&#65533;Urville	06	GUAN station	22	10	0	0	0	0	0	0	0			

Percentage of SYNOPS for main synoptic hours received via the GTS (Global Telecommunication Systsm) at BAS (British Antarctic Survey)

This is from the data feed that we receive at BAS from the UK Met Office, it is a partial feed only including stations of interest to BAS and it is subject to some interruption

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1998	01	02	03	04	05	06	07	08	09	10	11	12
1999	01	02	03	04	05	06	07	08	09	10	11	12
2000	01	02	03	04	05	06	07	08	09	10	11	12
2001	01	02	03	04	05	06	07	08	09	10	11	12
2002	01	02	03	04	05	06	07	08	09	10	11	12
2003	01	02	03	04	05	06	07	08	09	10	11	12
2004	01	02	03	04	05	06	07	08	09	10	11	12
2005	01	02	03	04	05	06	07	08	09	10	11	12
2006	01	02	03	04	05	06	07	08	09	10	11	12
2007	01	02	03	04	05	06	07	08	09	10	11	12
2008	01	02	03	04	05	06	07	08	09	10	11	12
2009	01	02	03	04	05	06	07	08	09	10	11	12
2010	01	02	03	04	05	06	07	08	09	10	11	12
2011	01	02	03	04	05	06	07	08	09	10	11	12
2012	01	02	03	04	05	06	07	08	09	10	11	12
2013	01	02	03	04	05	06	07	08	09	10	11	12
2014	01	02	03	04	05	06	07	08	09	10	11	12
2015	01	02	03	04	05	06	07	08	09	10	11	12
2016	01	02	03	04	05	06	07	08	09	10	11	12
2017	01	02	03	04	05	06	07	08	09	10	11	12
2018	01	02	03	04	05	06	07	08	09	10	11	12
2019	01	02	03	04	05	06	07	08	09			

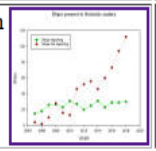
Percentage of SYNOPS for main synoptic hours

Received via the GTS at BAS for 2019 09

Values less than 80% are displayed in red

WMO Number	Percentage	Station name
01001	99	JAN MAYEN
01003	96	HORNSUND
01007	100	NY-ALESUND
01008	92	SVALBARD AP
01010	82	ANDOYA
01026	88	TROMSO
01028	96	BJORNOYA
01047	88	KAUTOKEINO
01049	90	ALTA LUFTHAVN
01055	99	FRUHOLMEN LH
01062	99	HOPEN
01078	87	SLETTNES LH
01098	51	VARDO
01102	19	SKLINNA LH
01115	98	MYKEN
01152	95	BODO VI
01160	91	SKROVA LH
01205	94	SVINOY LH
01212	90	ONA II
01218	88	TAFJORD
01238	74	FOKSTUGU
01241	96	ORLAND III
01271	85	TRONDHEIM/VERNES
01281	86	NAMSSKOGAN
01288	95	ROROS AP
01300	98	GULLFAKS C
01317	95	BERGEN/FLORIDA
01338	75	VANGSNES
01359	93	GEILO-OLDEBRATEN
01367	85	FAGERNES
01384	96	OSLO/GARDERMOEN
01397	95	TRYSIL VEGSTASJON
01400	96	EKOFISK
01403	87	UTSIRA LH
01415	89	STAVANGER/SOLA
01427	96	LISTA LH
01447	94	HOYDALSMO II
01448	86	OKSOY LH

Ships

Ships reporting in 2004/05	Ships reporting in 2005/06
Ships reporting in 2006/07	Ships reporting in 2007/08
Ships reporting in 2008/09	Ships reporting in 2009/10
Ships reporting in 2010/11	Ships reporting in 2011/12
Ships reporting in 2012/13	Ships reporting in 2013/14
Ships reporting in 2014/15	Ships reporting in 2015/16
Ships reporting in 2016/17	Ships reporting in 2017/18 [Updated 2018 June 22]
Ships reporting in 2018/19 [Updated 2019 July 1] The graph shows the position at the beginning of February. 	Ships reporting in 2019/20 [None yet!]
Sign up to send met reports through Yotreps	Latest list of ships with significant errors/biases in their reports
Download electronic met logbook software from the VOS website	Download Turbowin for sending messages
Oceanographic ship locations (Sailwx)	Ship locations (Sailwx)
Live ships map (Marine Traffic)	Palmer AIS (APRS.fi)

Planes

Coding aircraft observations (Draft)	

Overland traverses

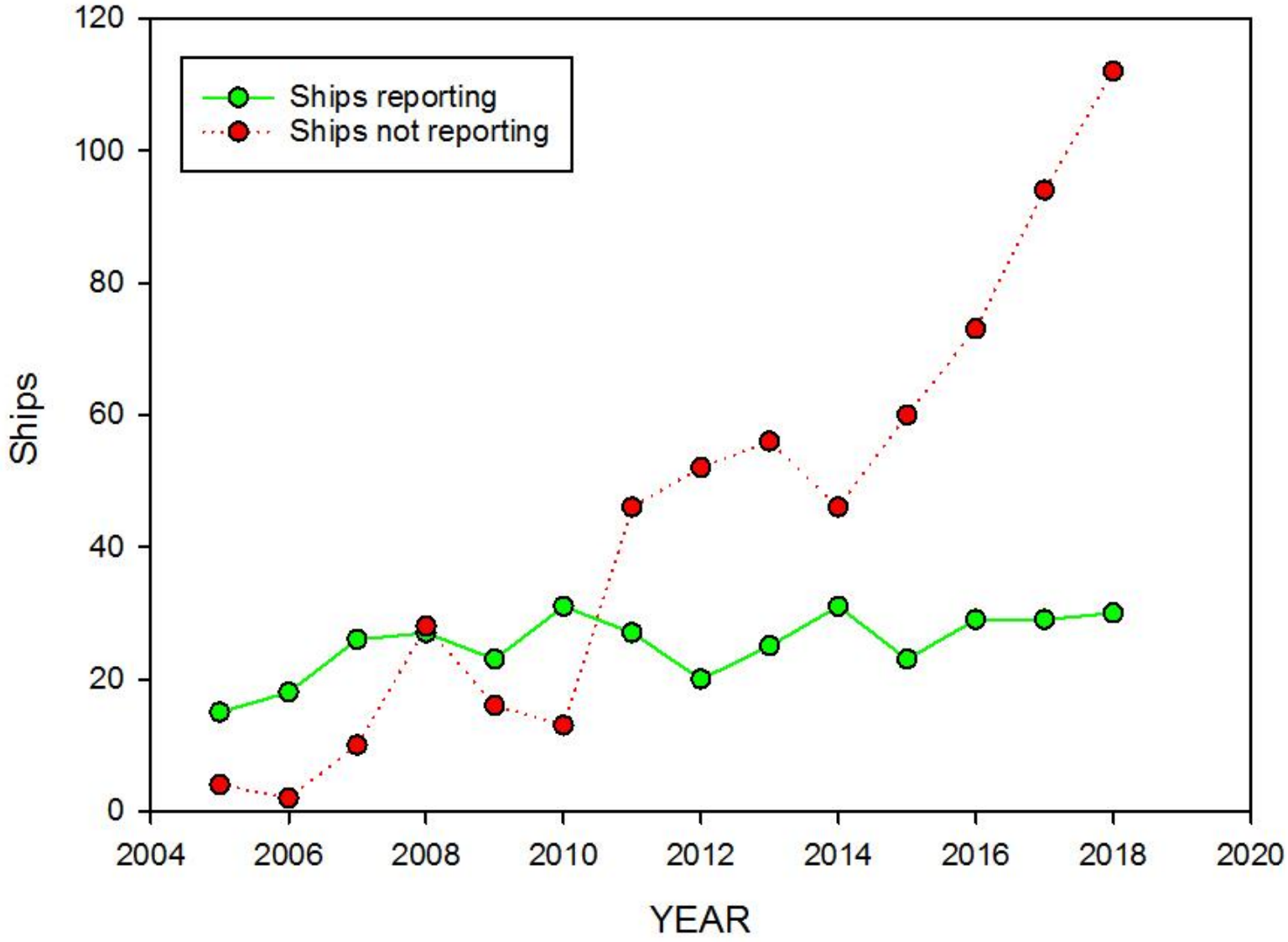
Reporting traverse observations (Draft)	

Forecasting and Forecasts

BAS Antarctic Weather Forecasting Manual	International Antarctic Weather Forecasting Manual [updated 2009 June]
Antarctic Mesoscale Prediction System Forecast products from Byrd Polar Research Center of Ohio State University	UV forecasts from SCIAMACHY
Antarctic ensemble plots from the Australian BoM & CSIRO	Forecasts for Norwegian Antarctic sites
TAFs and Forecast charts generated at Rothera for BAS operations	Forecasts for Dronning Maud Land Air Network (DROMLAN)

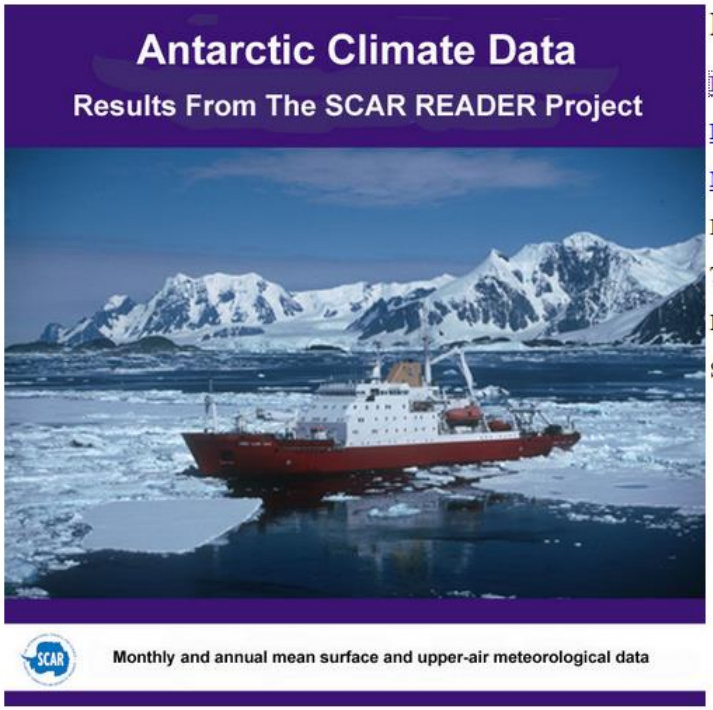
Information

University of Wisconsin Real time weather data and displays	WMO Polar Observations, Research and Services
Argentinian Antarctic weather information	Australian Antarctic weather information
Brazilian Antarctic weather information	Chilean weather information
	Italian Antarctic weather information
Russian Antarctic weather information	Russian weather server for Antarctica and sub Antarctic islands
Polar View Antarctic portal	UK Antarctic weather information
SCAR READER database	


Ships present in Antarctic waters
Ships reporting
Ships not reporting
Ships
YEAR
0
20
40
60
80
100
120
2004
2006
2008
2010
2012
2014
2016
2018
2020

READER

https://legacy.bas.ac.uk/met/READER/



Met READER

Background to the project

Data

Metadata

Last updated on 03/10/2019 at 16:03

Temperature and pressure data from the Australian Antarctic Division that is not included in Met READER can be accessed here

Ice READER can be accessed here

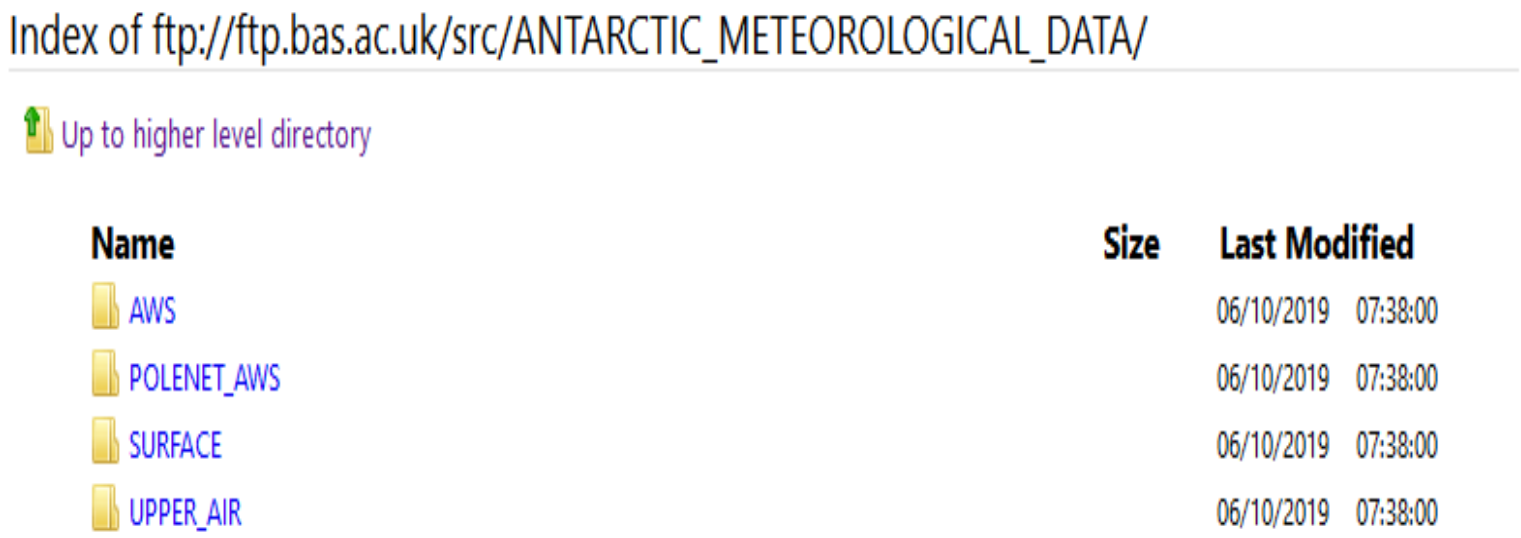
Southern Ocean READER can be accessed here

READER

2001	-0.2(100)	-4.5(100)	-4.8(100)	-10.8(100)	-11.1(100)	-15.1(100)	-10.1(100)	-16.2(100)	-11.0(100)	-11.9(100)	-6.4(100)	-2.0(100)
2002	0.4(100)	-2.9(100)	-6.1(100)	-8.5(100)	-11.3(100)	-10.7(100)	-12.6(100)	-14.0(100)	-14.0(100)	-12.2(100)	-4.0(100)	-2.1(100)
2003	-0.1(100)	-2.2(100)	-6.6(100)	-10.2(100)	-17.1(100)	-17.4(100)	-16.0(100)	-14.2(100)	-13.4(100)	-12.3(100)	-6.1(100)	-1.0(100)
2004	-0.7(100)	-1.1(99)	-7.2(100)	-11.1(100)	-14.3(98)	-14.4(98)	-16.6(98)	-12.5(100)	-13.4(100)	-10.5(100)	-6.3(98)	-0.2(100)
2005	0.7(100)	-2.0(100)	-7.7(100)	-10.7(100)	-14.9(100)	-13.5(100)	-18.5(100)	-17.4(99)	-12.6(100)	-10.5(100)	-5.6(100)	0.8(98)
2006	-0.4(100)	-2.5(100)	-5.8(100)	-7.7(100)	-18.4(100)	-15.0(100)	-12.3(100)	-12.1(100)	-15.0(100)	-12.6(100)	-7.0(100)	-1.4(100)
2007	0.1(100)	-2.1(100)	-5.0(100)	-8.2(100)	-12.6(100)	-13.5(100)	-10.9(100)	-13.7(100)	-13.0(100)	-10.2(99)	-4.3(100)	-1.9(100)
2008	-1.2(100)	-4.1(100)	-8.1(97)	-9.6(100)	-12.3(100)	-13.5(98)	-12.9(100)	-13.4(100)	-14.6(99)	-13.0(100)	-5.1(100)	-1.3(100)
2009	-0.8(100)	-1.6(100)	-5.4(100)	-11.5(100)	-11.3(100)	-12.3(99)	-9.3(100)	-14.8(100)	-10.5(100)	-9.3(100)	-5.7(100)	-1.4(99)
2010	1.3(100)	-3.5(100)	-8.0(99)	-14.6(100)	-14.0(99)	-13.1(99)	-15.9(100)	-15.8(100)	-14.1(100)	-11.2(99)	-6.0(99)	-1.6(99)
2011	0.8(100)	-3.9(100)	-7.0(100)	-8.5(100)	-16.5(100)	-17.2(100)	-16.3(99)	-12.3(100)	-13.4(100)	-11.0(100)	-6.6(100)	-1.2(100)
2012	-1.5(100)	-2.9(100)	-6.8(99)	-10.7(100)	-13.1(100)	-16.8(100)	-17.5(99)	-15.6(100)	-15.6(100)	-9.9(100)	-5.3(100)	-1.4(100)
2013	0.1(100)	-3.6(100)	-9.8(100)	-14.0(100)	-11.5(100)	-13.3(100)	-19.2(100)	-16.0(100)	-8.2(100)	-11.9(100)	-6.2(100)	-1.2(100)
2014	0.7(100)	-2.8(100)	-8.9(100)	-13.5(100)	-14.4(100)	-19.3(100)	-15.0(99)	-20.4(100)	-12.5(100)	-10.8(100)	-3.7(100)	-0.5(100)
2015	-0.3(100)	-1.5(100)	-6.6(100)	-14.0(100)	-16.4(100)	-13.2(100)	-18.1(100)	-16.4(100)	-15.5(100)	-13.8(100)	-5.5(100)	-0.8(100)
2016	-1.2(100)	-3.7(100)	-7.6(100)	-11.8(100)	-10.6(98)	-17.3(100)	-17.1(100)	-12.7(99)	-15.6(100)	-9.6(100)	-3.7(100)	-0.6(100)
2017	0.3(100)	-1.7(99)	-6.2(100)	-10.0(98)	-13.3(99)	-19.4(100)	-18.0(100)	-16.5(99)	-16.2(100)	-13.1(98)	-4.9(98)	-1.2(99)
2018	-0.5(100)	-2.5(98)	-8.7(100)	-7.3(100)	-14.9(100)	-13.1(87)	-11.2(91)	-19.3(100)	-16.9(100)	-10.3(100)	-4.8(98)	-1.2(100)
2019	-0.3(100)	-2.6(99)	-5.9(100)	-10.7(100)	-15.9(100)	-16.3(100)	-13.0(100)	-14.7(98)	-16.6(100)	-	-	-

Click here to download a text version of the above table

Antarctic meteorological data

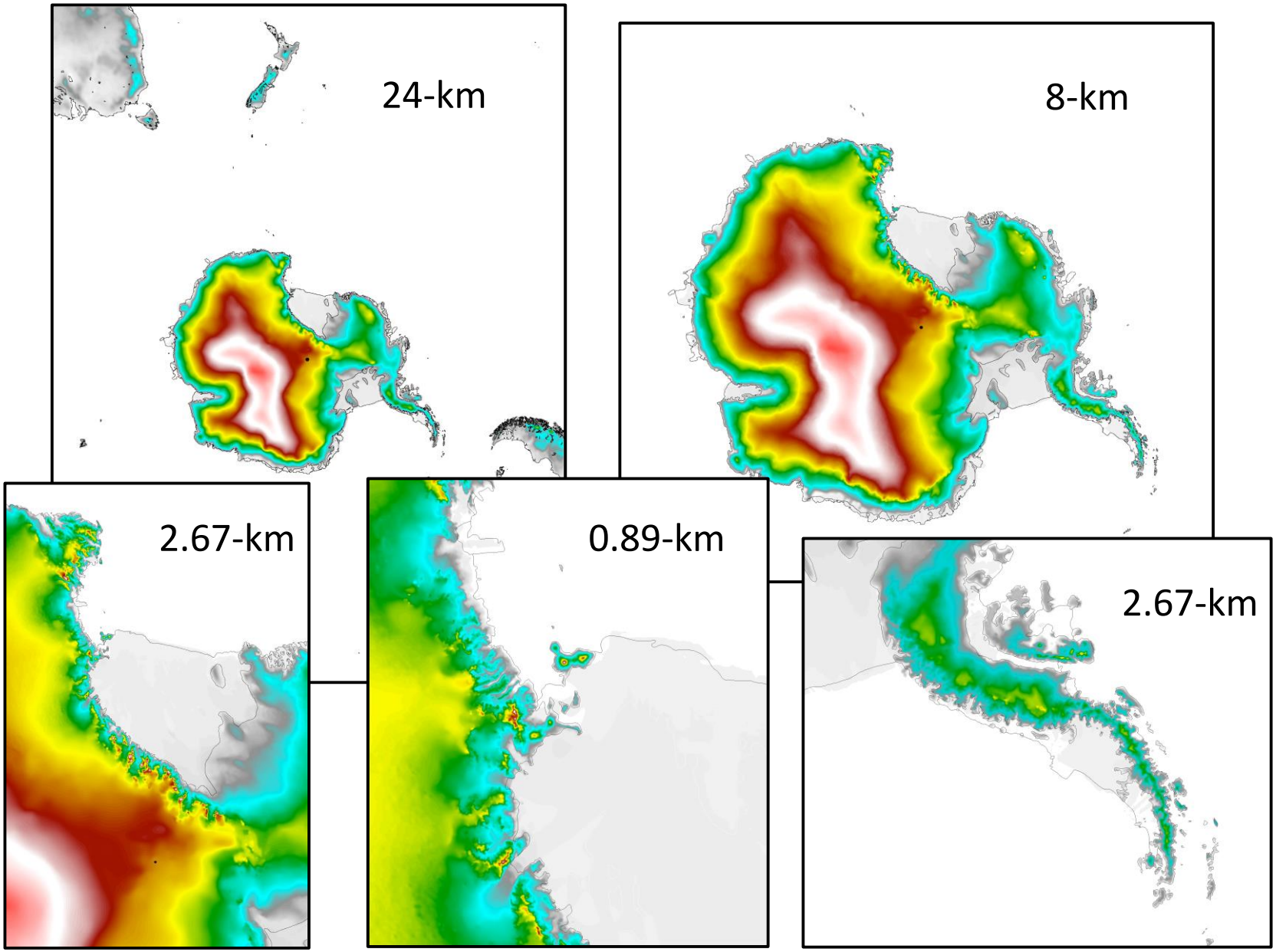


Weather forecasting in Antarctica

- Different national operators use different weather forecast products in Antarctica.
    - UK uses UK Met Office model products and contracts in UK Met Office forecasters at our Rothera research station.
    - The Italians use ECMWF forecast products
    - The Australians use the products produce by the Bureau of Meteorology.
    - etc
- One freely available forecast product that is widely used is AMPS (Antarctic Mesoscale Prediction System)

The Antarctic Mesoscale Prediction System (AMPS)

- Provides customized NWP support for Antarctic forecasters.
  - Forecast model is the Weather Research and Forecasting Model (WRF), tuned for the Antarctic environment.
- Funded by the National Science Foundation.
  - Collaboration between National Center for Atmospheric Research/ Mesoscale and Microscale Meteorology Laboratory and the Ohio State University/Byrd Polar Research Center.
  - Primary goals are to support USAP forecasters and activities, and to support research and education efforts in Antarctic meteorology.
- Real-time forecasts running since October 2000.
- Real-time products disseminated primarily through the AMPS web page (http://www2.mmm.ucar.edu/rt/amps/) and the Antarctic-IDD network.
- AMPS archive – recent years available through Earth System Grid.


24-km
8-km
2.67-km
0.89-km
2.67-km

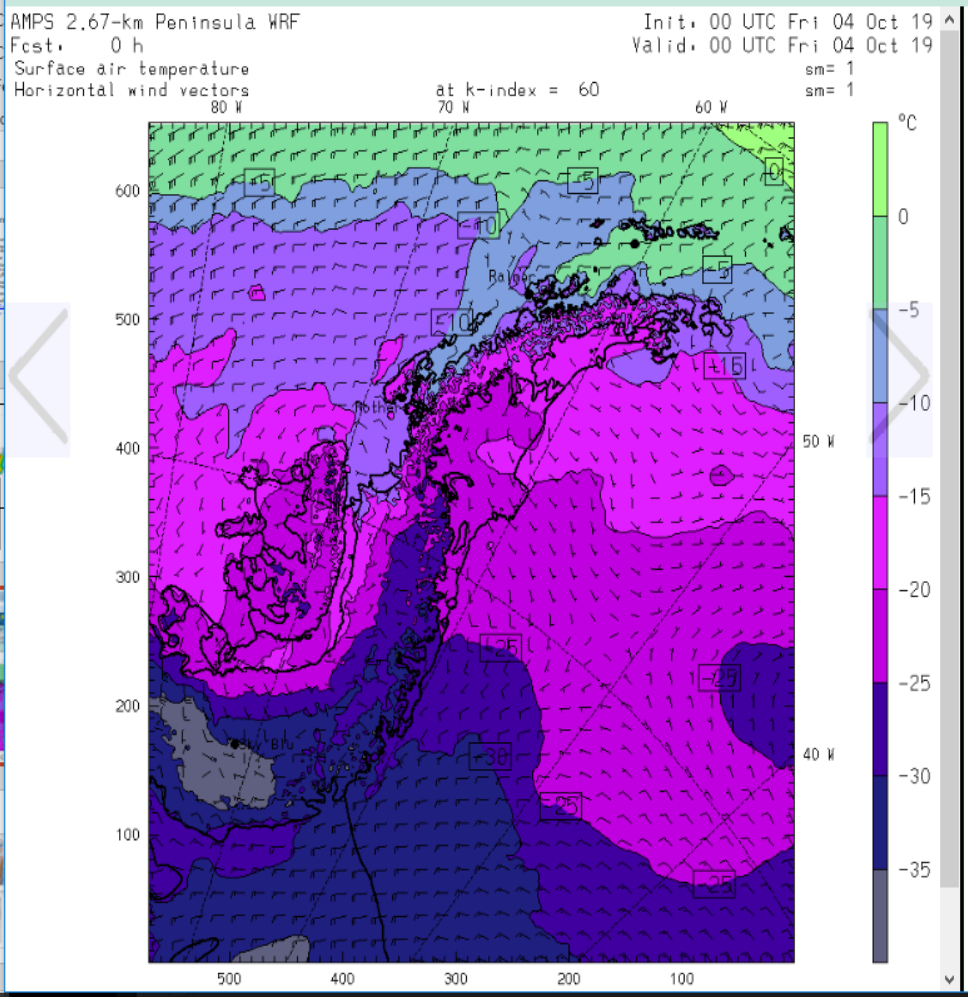
Antarctic WRF Mesoscale Predi

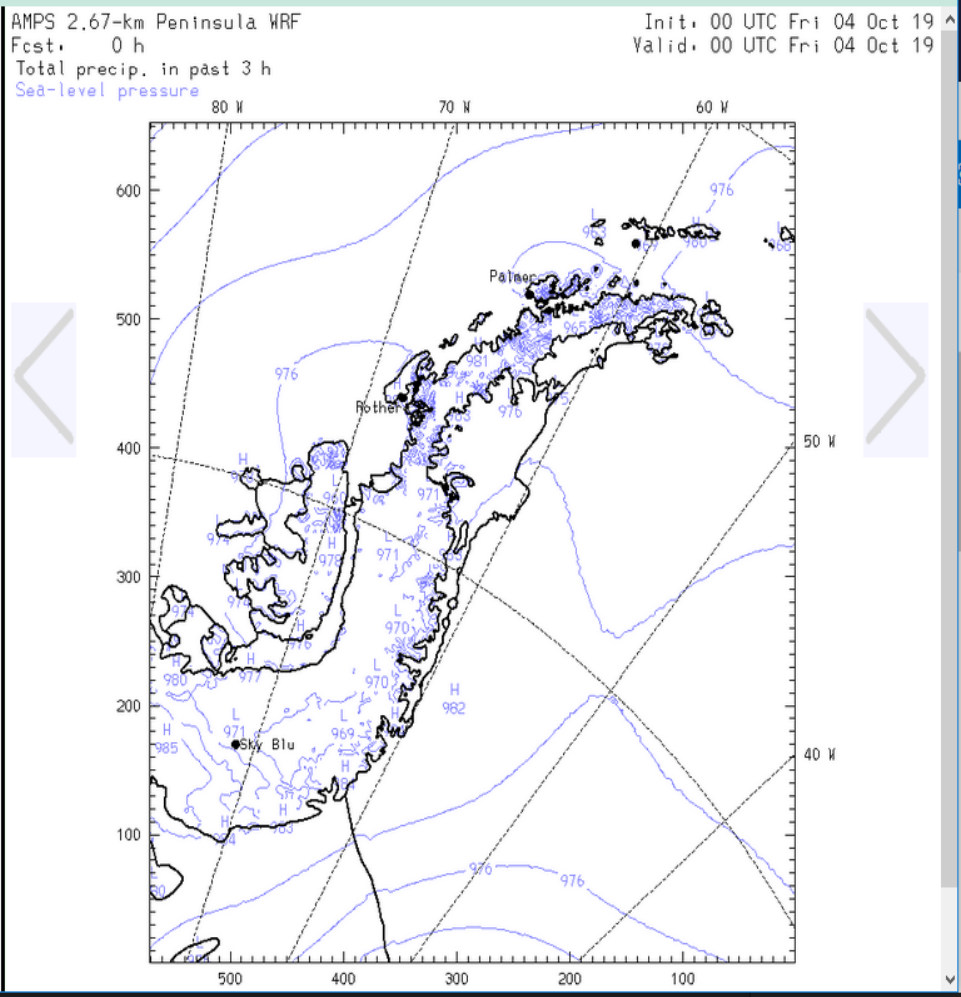
www2.mmm.ucar.edu/rt/amps/ 110%

THE ANTARCTIC MESOSCALE PREDICTION SYSTEM (AMPS)

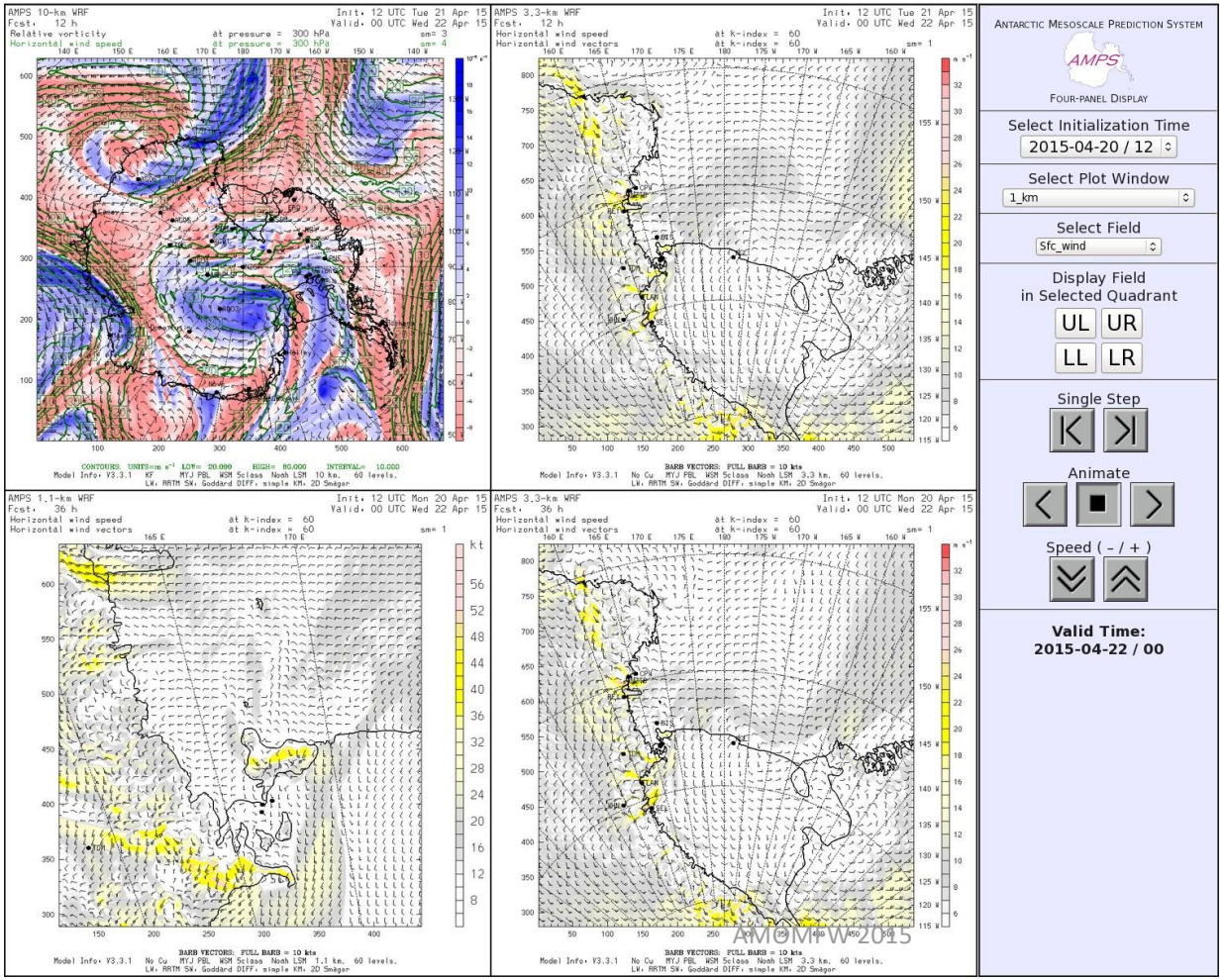
AMPS Info | Products Directory | GRIB | Status | AMPS-Related Links

Forecast Hr	Grid / Window	Initial Time	Product
00 h	2.67 km Antarctic Peninsula	2019100400	SFC / Sfc RH / Sfc RH (H20) / SLP/Precip / Cloud base / Sea ice
Animations	Full / New / Scaled	Go Left / Go Right	Upper air: Soundings: Tables
4-Panel			Cross sections: PseudoSat / Sfc wind: Meteograms



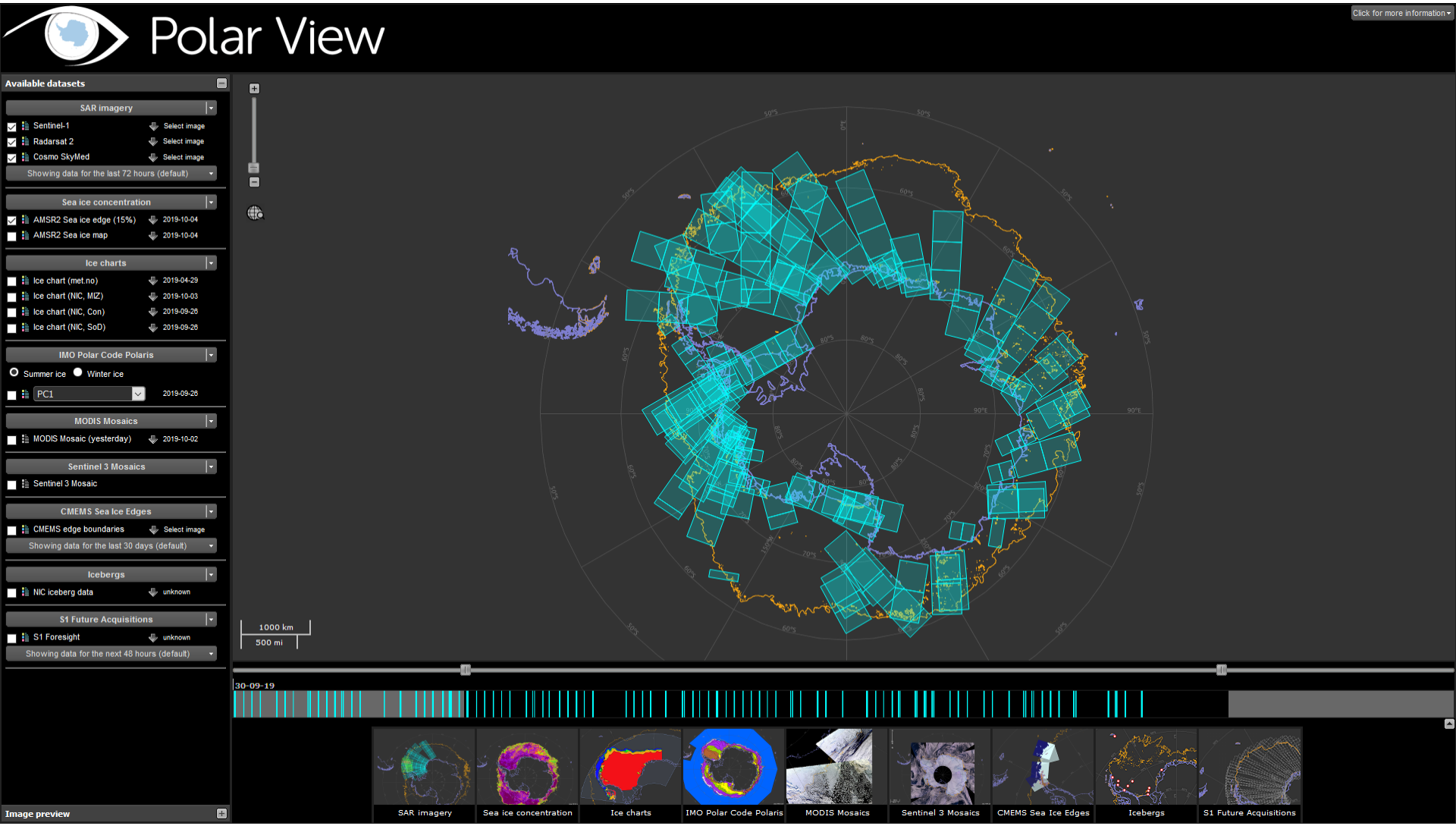


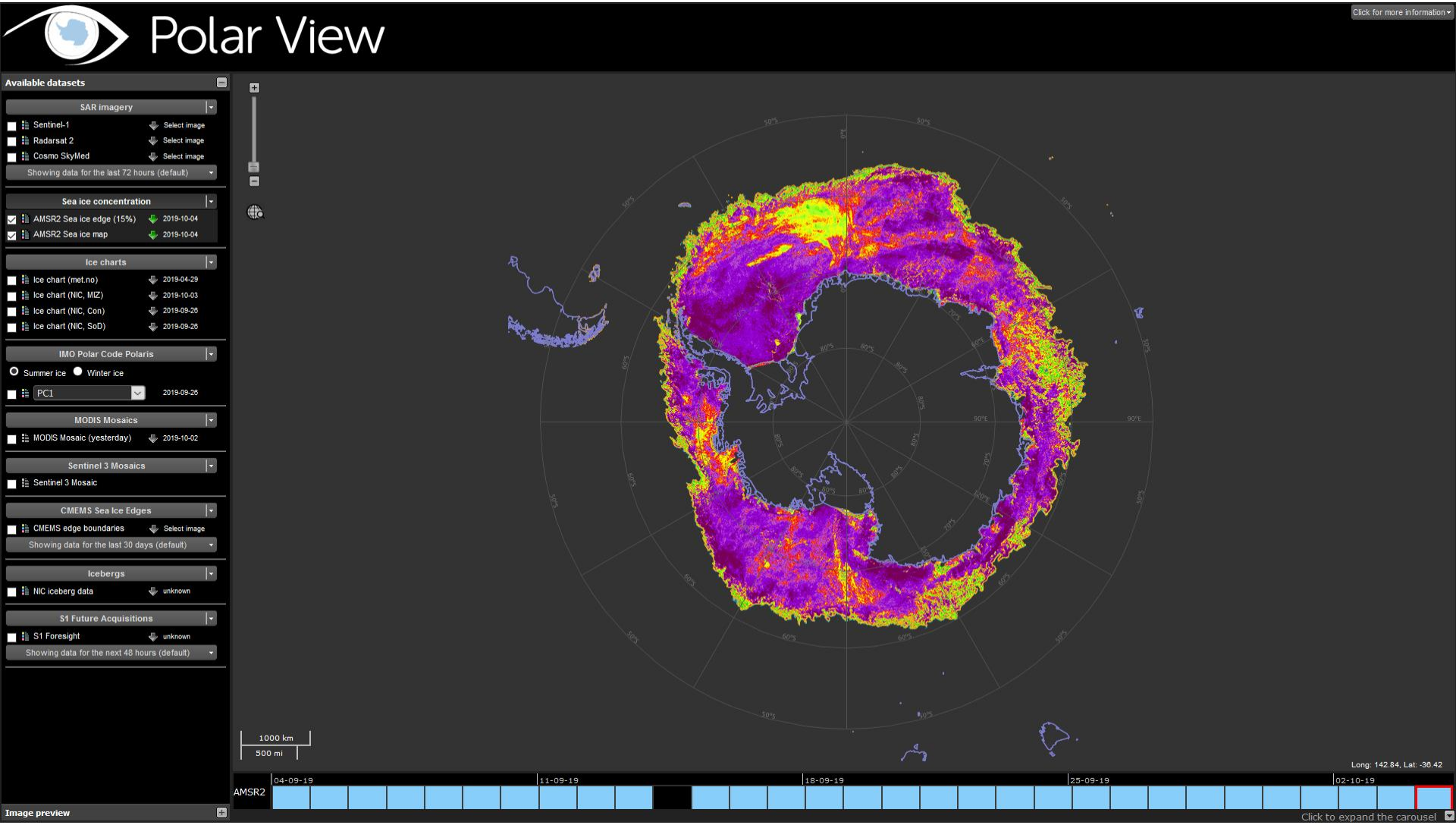
AMPS 4-Panel Display



Step through or animate multiple fields

All graphics linked by matched forecast valid time


Polar View
Click for more information
Available datasets
SAR imagery
Sentinel-1
Select image
Radarsat 2
Select image
Cosmo SkyMed
Select image
Showing data for the last 72 hours (default)
Sea ice concentration
AMSR2 Sea ice edge (15%)
2019-10-04
AMSR2 Sea ice map
2019-10-04
Ice charts
Ice chart (met.no)
2019-04-29
Ice chart (NIC, MIZ)
2019-10-03
Ice chart (NIC, Con)
2019-09-26
Ice chart (NIC, SoD)
2019-09-26
IMO Polar Code Polaris
Summer ice
Winter ice
PC1
2019-09-26
MODIS Mosaics
MODIS Mosaic (yesterday)
2019-10-02
Sentinel 3 Mosaics
Sentinel 3 Mosaic
CMEMS Sea Ice Edges
CMEMS edge boundaries
Select image
Showing data for the last 30 days (default)
Icebergs
NIC iceberg data
unknown
S1 Future Acquisitions
S1 Foresight
unknown
Showing data for the next 48 hours (default)
Image preview
1000 km
500 mi
30-09-19
SAR imagery
Sea ice concentration
Ice charts
IMO Polar Code Polaris
MODIS Mosaics
Sentinel 3 Mosaics
CMEMS Sea Ice Edges
Icebergs
S1 Future Acquisitions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2019-10-02
Sentinel 3 Mosaics
Sentinel 3 Mosaic
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CMEMS edge boundaries
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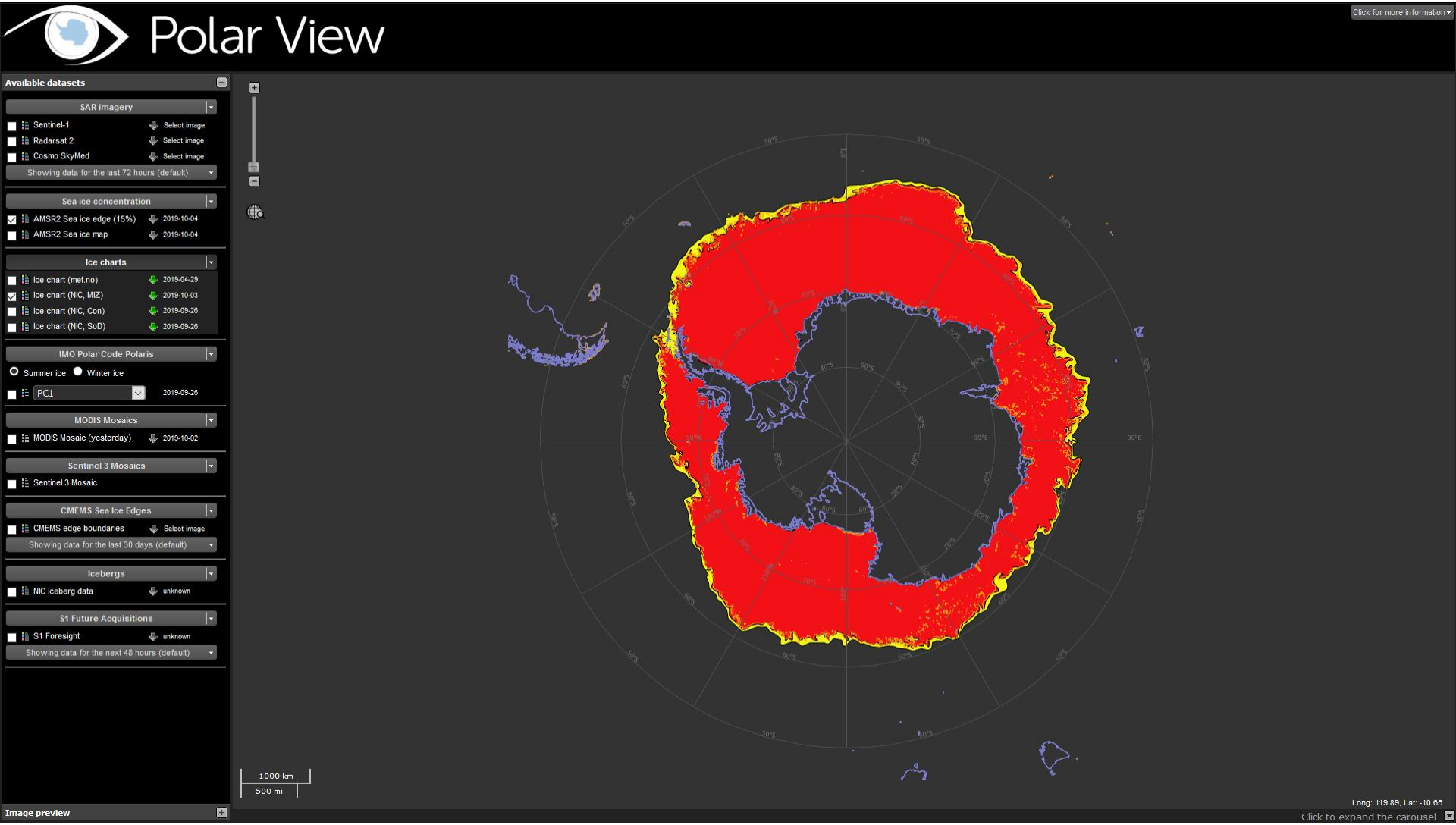
Icebergs
NIC iceberg data
unknown
S1 Future Acquisitions
S1 Foresight
unknown
Showing data for the next 48 hours (default)
Image preview
1000 km
500 mi
Long: 142.84, Lat: -36.42
AMSR2
04-09-19
11-09-19
18-09-19
25-09-19
02-10-19
Click to expand the carousel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Sentinel-1
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CMEMS edge boundaries
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Icebergs
NIC iceberg data
unknown
S1 Future Acquisitions
S1 Foresight
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Showing data for the next 48 hours (default)
1000 km
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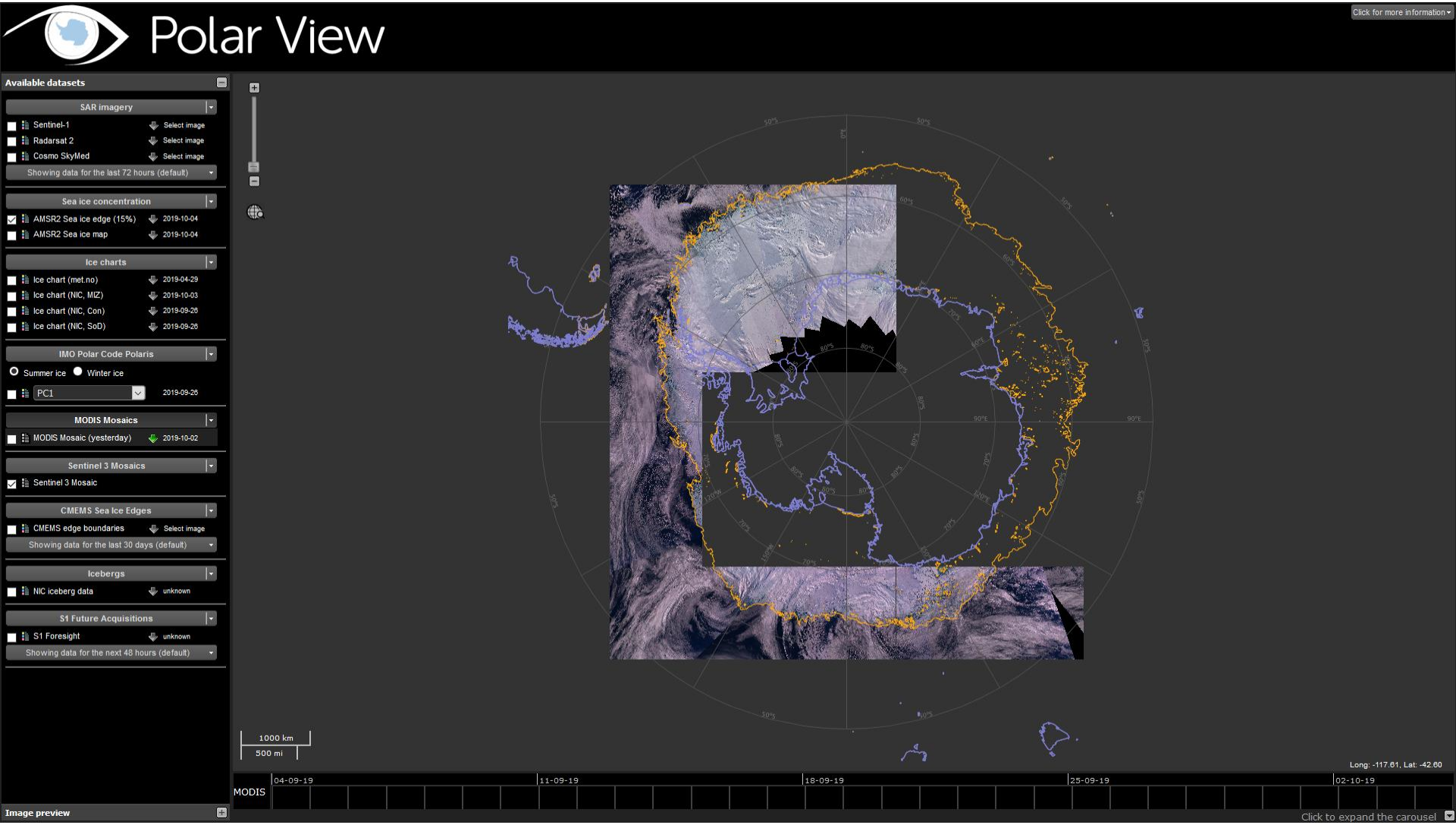
Image preview
Click to expand the carousel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CMEMS edge boundaries
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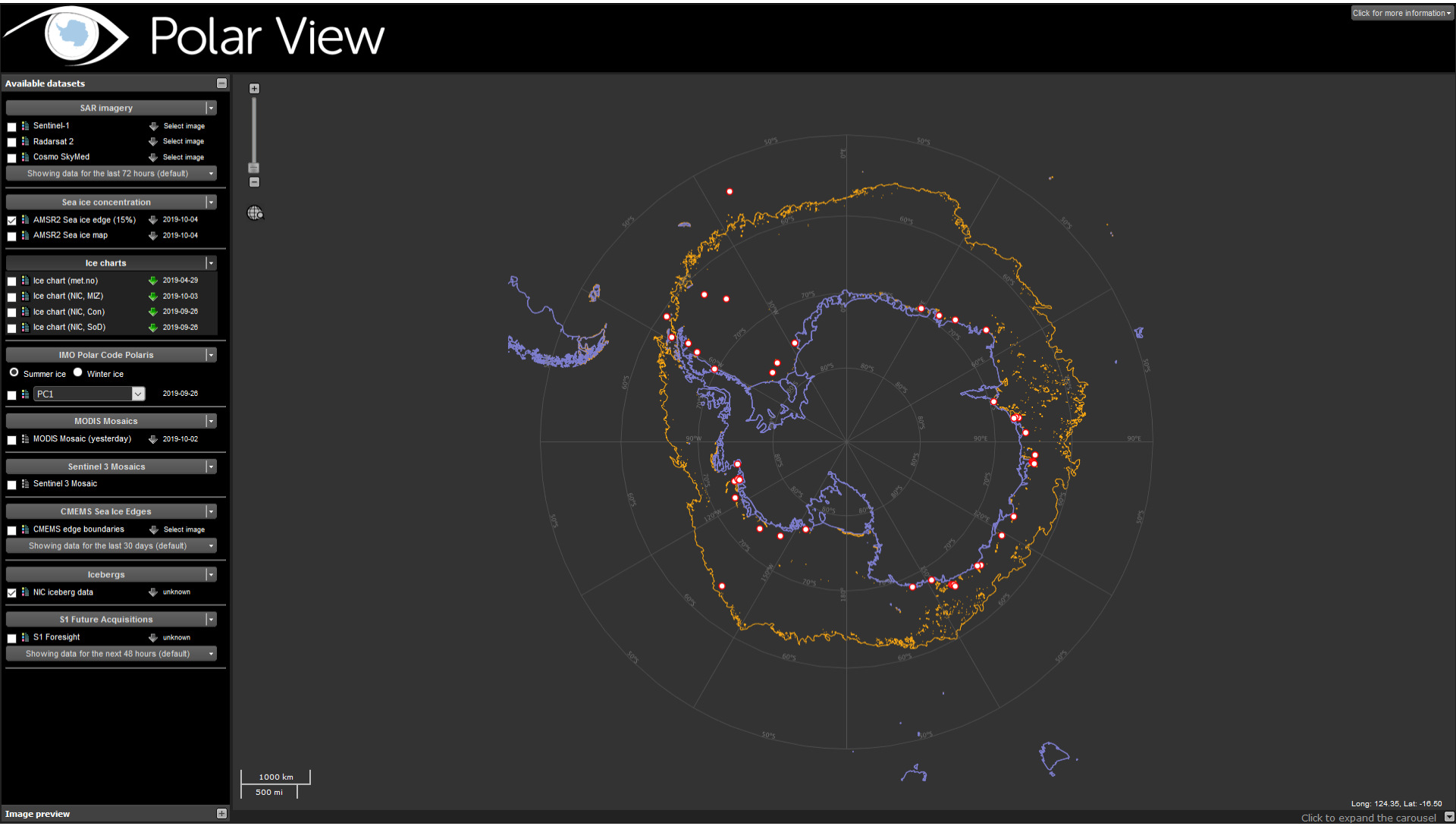
Icebergs
NIC iceberg data
unknown
S1 Future Acquisitions
S1 Foresight
unknown
Showing data for the next 48 hours (default)
Image preview
1000 km
500 mi
Long: -117.61, Lat: -42.60
04-09-19
11-09-19
18-09-19
25-09-19
02-10-19
MODIS
Click to expand the carousel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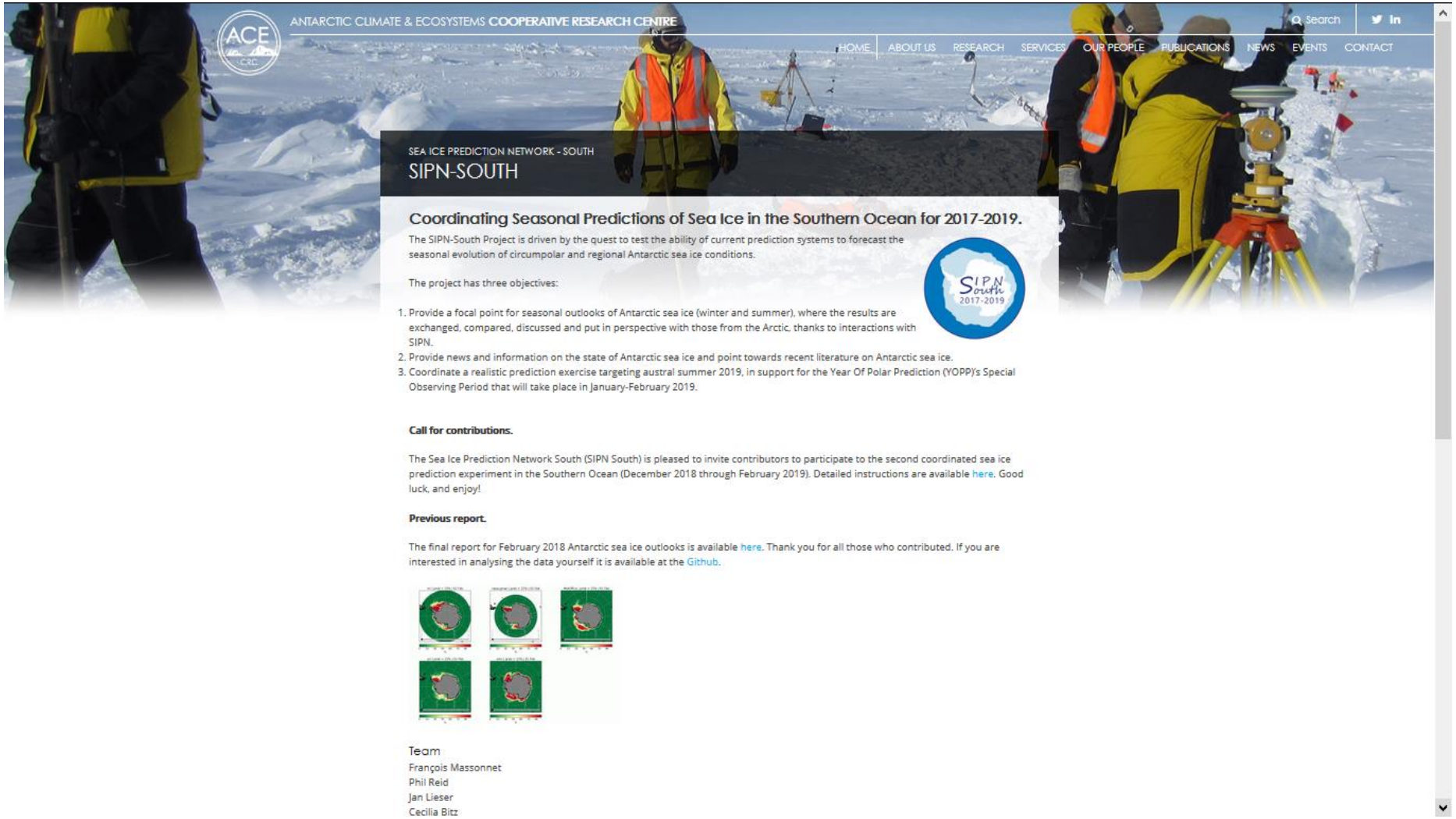
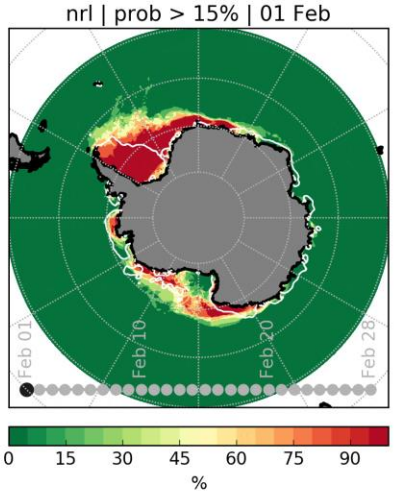
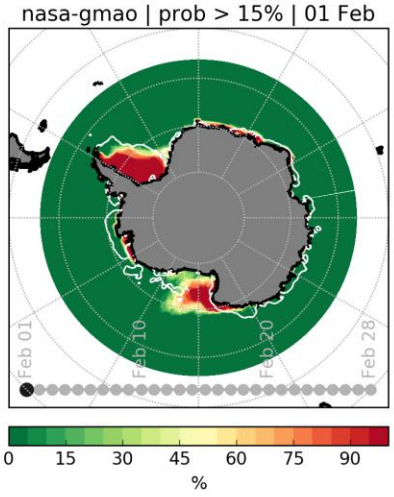
Select image
Showing data for the last 30 days (default)
Icebergs
NIC iceberg data
unknown
S1 Future Acquisitions
S1 Foresight
unknown
Showing data for the next 48 hours (default)
1000 km
500 mi
Long: 124.35, Lat: -16.50
Image preview
Click to expand the carousel

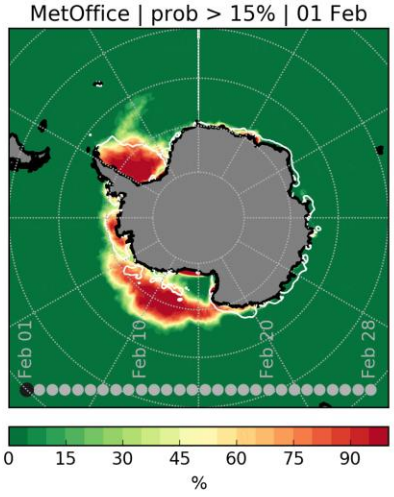
Sea Ice Prediction Network – South (SIPN-SOUTH)

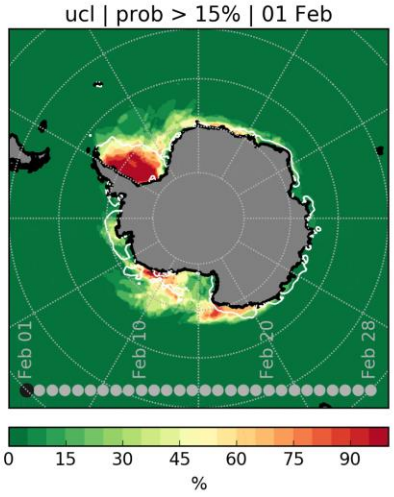


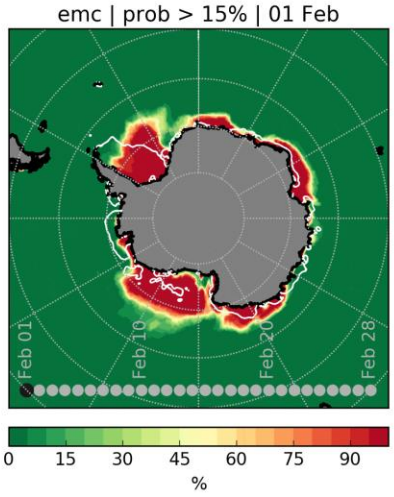
Sea Ice Prediction Network – South (SIPN-SOUTH)











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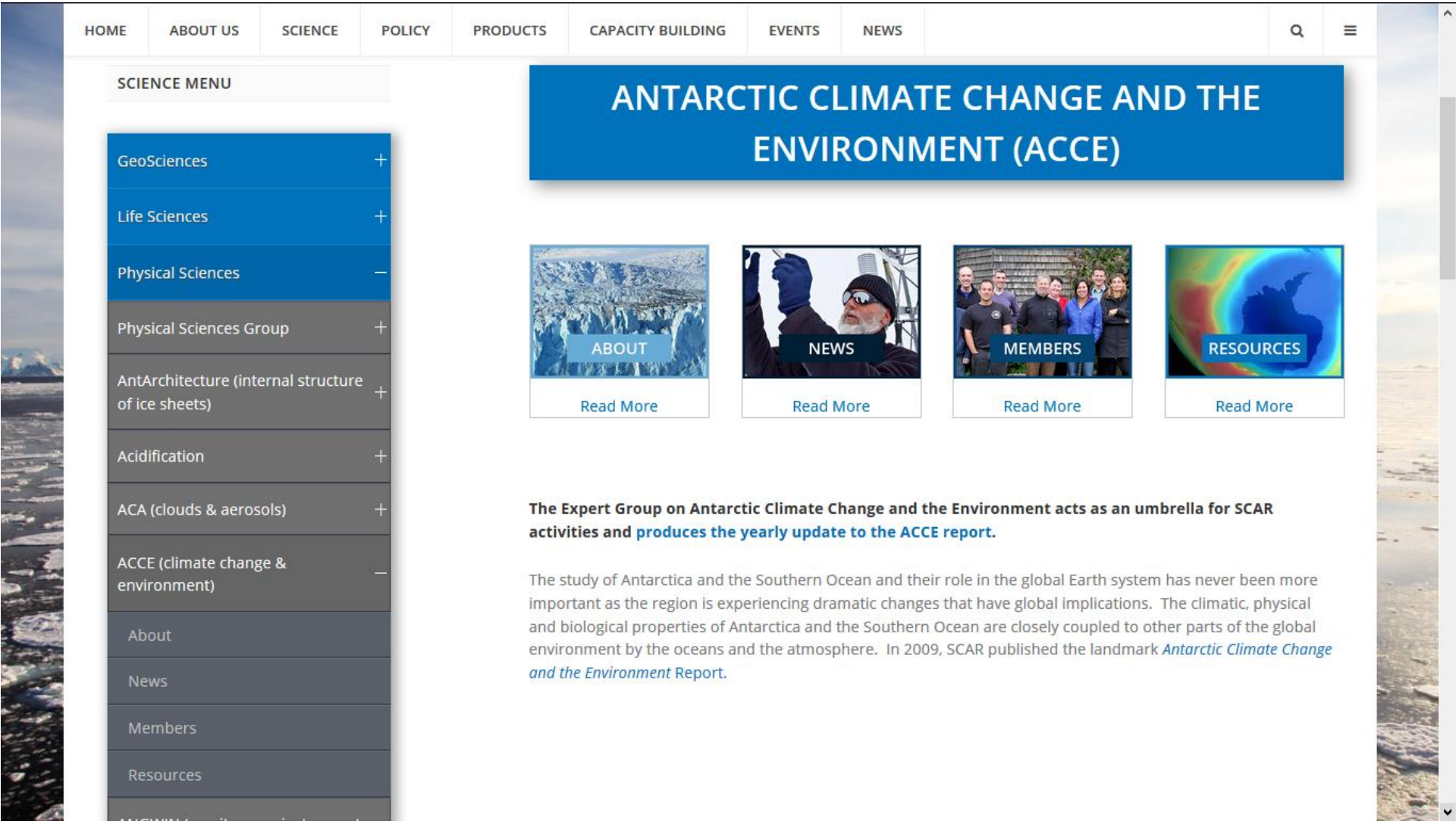

What is needed

- Hopefully the monitoring that is already carried out at BAS will at least partially fulfil this requirement of an Antarctic RCC.

- The short term forecast products seem to be in place but at the moment there is a lack of long term (monthly to seasonal) forecast products that could be used for operational planning of Antarctic seasons by the national operators.

- The requirements should be driven by the needs of the national operators and other stakeholders.

QUESTIONS ?