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The Antarctic Observing Network (AntON) to facilitate weather and climate information

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Introduction

Antarctica is a very data sparse area of the world and so it is important to maximise use of all of the meteorological and other data that are collected there for weather, climate and other research and operational activities. These data are useful for both the Global Cryosphere Watch (GCW) and for the Year of Polar Prediction (YOPP – see separate IP 15). However, the density of the current surface and upper-air stations is much less than that desirable to properly characterize Antarctic weather and climate.

Both WMO (through its Executive Council Panel of Experts on Polar and High Mountain Observations, Research and Services and its Antarctic Task Team) and the Scientific Committee on Antarctic Research (SCAR) through its Expert Group on Operational Meteorology in the Antarctic aim to maximise the dissemination and use of such data through the Antarctic Observing Network (AntON).

The Antarctic Observing Network (AntON)

AntON consists of manned and automatic weather stations currently in operation in Antarctica and the sub Antarctic islands. The current list (as of end Feb. 2016) is provided in Appendix 1 and is also available online (see below). The network distribution is updated on a regular basis when new details about stations are received (e.g. new installations, removals or failures). A subset of AntON makes up the Antarctic part of the Global Climate Observing System (GCOS) Surface Network (GSN). The British Antarctic Survey (BAS) carries out the GCOS monitoring for Antarctica and is also registered as a Data Collection or Production Centre for Antarctica under the auspices of the WMO Information System (WIS). Details about the monitoring can be found on the monitoring page at <http://tinyurl.com/j7f5okr>. This site also contains resources for national operators to see the quantity and quality of their observations and also links to online resources.

Using AntON is a way of ensuring people know of the sites where data are available, but it does rely on national operators making WMO aware of any new installations or sites that are no longer functioning.

In addition to keeping a list of the operational meteorological sites in Antarctica, WMO and SCAR, through BAS also monitor the meteorological reports from ships that are operating in Antarctic waters (see Appendix 2). All ships operating in Antarctic waters are encouraged to make meteorological observations and then to transmit them on the Global Telecommunications System (GTS) to make them available through the WMO Information System. More details about doing this can be found in the ships section of the monitoring page.

Aircraft operating in Antarctica are asked by the WMO to provide meteorological observations for use in weather forecasting. If an aircraft is fitted with Aircraft Meteorological Data Relay (AMDAR) capability, the system will automatically compile and transmit aircraft meteorological observations over Antarctica. National operators are asked to ensure that all Aircraft Reports generated for aviation purposes that contain meteorological information, including over Antarctica, are sent to one of the International Civil Aviation Organisation World Areas Forecast Centres (WAFCs) so that they can be compiled into bulletins and transmitted¹.

At present information (metadata) about AntON is only reflected in a list of sites where meteorological data are collected but in future it will also include additional metadata, such as which parameters are recorded at a site, how long they have been measured and if they are manual or automated observations. These metadata will follow the WMO Integrated Global Observing Systems Metadata Standard (WMDS) defined in the WIGOS Manual² and will be available via the OSCAR database (oscar.wmo.int) of the WMO. The need for

¹ To be transmitted in FM 94 BUFR binary format. Details on coding aircraft-based observations can be found in the relevant section of the WMO Manual on Codes (WMO-No. 306).

² WMO report No. 1160, approved by the 17th World Meteorological Congress (pages 370-448 at http://library.wmo.int/pmb_ged/wmo_1157_en.pdf).

such metadata was highlighted in the Outcomes of the Intersessional Contact Group on Information Exchange Requirements at ATCM 38³

Recommendations

Noting in particular the outcomes of the Intersessional Contact Group on Information Exchange Requirements, WMO and SCAR recommend that Treaty Parties:

1. Note the need for the Antarctic Observing Network (AntON) and its associated metadata in accordance with WMO practices⁴
2. Notify the AntON (AntON@wmo.int) if there are any changes regarding stations/platforms in the Antarctic region where meteorological data are collected
3. Provide to the AntON (AntON@wmo.int) whenever possible the metadata concerning which information is collected at each site or ship that relates to meteorology and related (e.g. snow depth) data
4. Ensure aircraft operating in Antarctica provide meteorological observations, either through AMDAR or by compiling such information into bulletins and transmitting them to their local WMO Information System/GTS centre.

³ http://www.ats.aq/documents/ATCM38/att/ATCM38_att123_e.doc.

⁴ The Observing Systems Capability Analysis and Review tool (OSCAR); WMO report No. 1160, approved by the 17th World Meteorological Congress (pages 370-448 at http://library.wmo.int/pmb_ged/wmo_1157_en.pdf).

1.

Appendix 1

WMO Antarctic Observing Network (AntON)

This list shows the stations currently comprising the Antarctic Observing Network (AntON). It shows whether the stations currently contribute synoptic (S), climate (C) or upper-air (U) synoptic observations to the GTS, whether they are GCOS Surface Network (GSN), GCOS Upper-Air Network (GUAN) or GAW stations. Key stations are those that are GCOS stations or are over 200 km distant from a GCOS station. Station numbers beginning AA are sent on the GTS in SYNOP MOBIL code form. All operational AntON stations are expected to produce CLIMAT messages, provided that they have suitable data.

Note: In addition to AntON stations, a number of other stations in the Southern Ocean (within the responsibility of RAs I, III and IV) lie in the EC-PORS zone of interest and are, therefore, listed below AntON for information.

Abbreviations: X = message or data expected; NO = not operational; Add = suggestion for addition to the RBCN; Closed = GAWSIS indicates station is closed or inactive.

Updates:

2015 August 3 – 89536 and 89558 added

2015 November 2 – 89079 and 89776 added

2016 January 15 – 89011 and 89047 added

Antarctic stations									
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>		<i>S</i>	<i>U</i>	<i>Key</i>	<i>GSN</i>	<i>GUAN</i>	<i>GAW</i>
88963	Esperanza	Argentina		X		X	X		
88968	Orcadas	Argentina		X		X	X		
89002	Neumayer	Germany		X	X	X	X	X	X
89003	Halvfarryggen EP11	Netherlands	AWS	X					
89004	SANAE	South Africa		X		X	X		
89009	Amundsen-Scott	USA		X	X	X	X	X	X
89011	Soerasen	Germany		NO					
89013	Baldrick	UK (BAS)	AWS	X		X			
89014	Nordenskiold	Finland	AWS	X		X			
89022	Halley	UK (BAS)		X	X	X	X	X	X
89034	Belgrano II	Argentina		X		X			X
89047	Filchner	Germany		NO		X			
89049	AGO-2	USA (USAP)	AWS	NO		X			
89050	Bellingshausen	Russia		X		X	X		
89051	Petrel	Argentina	AWS						
89053	Base Carlini	Argentina		X		X			X
89054	Dinamet	Uruguay		X					X
89055	Marambio	Argentina		X	X	X	X	X	X
89056	Frei	Chile		X		X	X		X
89057	Arturo Prat	Chile	AWS	X					
89058	Great Wall	China		X					
89059	O'Higgins	Chile		X		X			
89061	Palmer	USA		X		X			X
89062	Rothera	UK (BAS)		X	X	X	X		X
89063	Vernadsky	Ukraine		X		X	X		X
89064	Juan Carlos I	Spain		X					

Antarctic stations									
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>		<i>S</i>	<i>U</i>	<i>Key</i>	<i>GSN</i>	<i>GUAN</i>	<i>GAW</i>
89065	Fossil Bluff	UK (BAS)	AWS	X		X	X		
89066	San Martin	Argentina		X		X			X
89070	Gabriel de Castilla	Spain							
89079	Criosfera 1	Brazil		X		X			
89087	Thiel Mountains	USA (ANI)	AWS	X		X			
89108	Henry	USA (UoW)	AWS	X		X			
89132	Russkaya	Russia	AWS	X		X			
89251	King Sejong	Rep. of Korea		X					X
89252	Comandante Ferraz	Brazil		NO					
89253	Joinville Island	Brazil	AWS	NO					
89257	Limbert	UK (BAS)	AWS	X		X			
89260	Larsen B Scar Inlet	Netherlands	AWS						
89262	Larsen Ice Shelf	UK (BAS)	AWS	X		X	X		
89265	Larsen C North	Netherlands	AWS						
89266	Butler Island	UK (BAS)	AWS	X		X	X		
89267	Larsen C South	Netherlands	AWS						
89269	Bonaparte Point	USA (UoW)	AWS	X					
89272	Sky Blu	UK (BAS)	AWS	X		X	X		
89314	Theresa	USA (UoW)	AWS	X		X			
89324	Byrd Station	USA (UoW)	AWS	X		X	X		
89327	Mount Siple	USA (UoW)	AWS	X		X	X		
89329	Harry	USA (UoW)	AWS	X		X	X		
89332	Elizabeth	USA (UoW)	AWS	NO		X			
89345	Siple Dome	USA (UoW)	AWS	X		X	X		
89376	Gill	USA (UoW)	AWS	X		X	X		
89377	Lettau	USA (UoW)	AWS	X		X	X		
89504	Troll	Norway	AWS	X		X			
89507	Kohnen EP9	Netherlands	AWS	X		X			
89512	Novolazarevskaya	Russia		X	X	X	X	X	Close d
89514	Maitri	India		X					X
89526	Princess Elisabeth	Belgium		X	X				X
89528	AGO-3	USA (USAP)	AWS	NO					
89532	Syowa	Japan		X	X	X	X	X	X
89536	Plateau	Netherlands	AWS	X		X			
89542	Molodeznaja	Russia	AWS	X		X			
89558	Pole of Relative Inaccessibility	Netherlands	AWS	X		X			
89564	Mawson	Australia		X	X	X	X	X	Unkn own
	Taishan	China				X			
89570	Davis (Whoop Whoop)	Australia	AWS	X					
89571	Davis	Australia		X	X	X	X	X	X
89573	Zhongshan	China		X		X	X		X
89574	Progress	Russia		X		X	X		
89575	Druzhnaya 4	Russia	AWS	X					
89577	Dome A	Australia	AWS	X		X	X		
89578	Eagle	Australia	AWS	X		X			
89586	Davis (Mount Brown)	Australia	AWS	NO		X			
89592	Mirnyj	Russia		X	X	X	X	X	Close

Antarctic stations									
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>		<i>S</i>	<i>U</i>	<i>Key</i>	<i>GSN</i>	<i>GUAN</i>	<i>GAW</i>
									d
89598	AGO-4	USA (UoW)	AWS	NO		X			
89601	Oazic Bangera	Russia	AWS	X					
89606	Vostok	Russia		X		X	X		Close d
89610	Casey (Cape Poinsett)	Australia	AWS	NO		X			
89611	Casey	Australia		X	X	X	X	X	X
89614	Wilkins Runway West	Australia	AWS	X					
89615	Wilkins Runway East	Australia	AWS	X					
89625	Concordia	Italy		X	X	X	X		X
89628	AGO-1	USA (USAP)	AWS	NO		X			
89642	Dumont d'Urville	France		X	X	X	X	X	X
89643	Port Martin	USA (UoW / France)	AWS	NO					
89646	Sitry (Irene)	Italy	AWS	X		X			
89648	Mid Point (Giulia)	Italy	AWS	X		X			
89657	Leningradskaya	Russia	AWS	X		X			
89659	Priestley Nevee (Modesta)	Italy	AWS	X		X			
89661	Cape Phillips (Silvia)	Italy	AWS	X		X			
89662	Mario Zuchelli Station	Italy		X	X	X	X		
89664	McMurdo	USA		X	X	X	X	X	X
89665	Scott Base	New Zealand				X			X
89666	Cape Ross (Arelis)	Italy	AWS	X		X			
89667	Pegasus North	USA (UoW)	AWS	X		X			
89671	Cape Hallett	USA (UoW)	AWS						
89734	Dome Fuji	USA (UoW/Japan)	AWS	X					
89744	Relay Station	USA (UoW/Japan)	AWS	X		X	X		
89767	Amery Ice Shelf (G3)	Australia	AWS	X		X			
89768	Minna Bluff	USA (UoW)	AWS	X					
89769	Linda	USA (UoW)	AWS	X					
89776	Bharati	India		X					
89799	Nico	USA (UoW)	AWS	X		X			
89807	Casey (Snyder Rocks)	Australia	AWS	X					
89809	Casey Skiway South	Australia	AWS	NO		X			
89811	Casey (Law Dome Summit)	Australia	AWS	X		X			Unkn own
89815	Casey (Haupt Nunatak)	Australia	AWS	X					
89828	Dome C II	USA (UoW / France)	AWS	X		X	X		
89832	D-10	USA (UoW / France)	AWS	X					

Antarctic stations									
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>		<i>S</i>	<i>U</i>	<i>Key</i>	<i>GSN</i>	<i>GUAN</i>	<i>GAW</i>
89834	D-47	USA (UoW / France)	AWS	X					
89836	D-85	USA (UoW / France)	AWS	NO		X			
89859	Jang Bogo	South Korea		X	X				
89864	Manuela	USA (UoW)	AWS	X					
89865	Whitlock	USA (UoW)	AWS	X		X	X		
89866	Marble Point	USA (UoW)	AWS	X		X	X		
89868	Schwerdtfeger	USA (UoW)	AWS	X					
89869	Marilyn	USA (UoW)	AWS	X		X	X		
89872	Ferrell	USA (UoW)	AWS	X		X	X		
89873	Elaine	USA (UoW)	AWS	X					
89879	Possession Island	USA (UoW)	AWS	X		X	X		
AAALE	Cape King (Alessandra)	Italy	AWS	X					
AABRP	Bear Peninsula	USA (UoW)	AWS	X					
AACBD	Cape Bird	USA (UoW)	AWS	X					
AABRI	Brianna	USA (UoW)	AWS	X		X			
AADIS	Dismal Island	USA (UoW)	AWS	X					
AACDN	Cape Denison	USA (UoW / Australia)	AWS	X		X			
AAEML	Emilia	USA (UoW)	AWS	X					
AAEMM	Emma	USA (UoW)	AWS	X					
AAERN	Erin	USA (UoW)	AWS	X		X			
AAEKN	Evans Knoll	USA (UoW)	AWS	X					
AAJNT	Janet	USA (UoW)	AWS	X		X			
AAKMS	Kominko-Slade	USA (UoW)	AWS	X					
AALR2	Laurie II	USA (UoW)	AWS	X					
AALOL	Tourmaline Plateau (Lola)	Italy	AWS	X					
AAMGT	Margaret	USA (UoW)	AWS	X					
AAMIZ	Mizuho	USA (UoW/Japan)	AWS	X		X			
AAPEG	Pegasus South	USA (UoW)	AWS	NO					
AAPET	Peter I Oy	USA (UoW)	AWS	NO		X			
AAPIG	Pine Island Glacier	USA	AWS	NO		X			
AARIT	Enigma Lake (Rita)	Italy	AWS	X					
AASAB	Sabrina	USA (UoW)	AWS	X					
AASOF	Sophia-B	Italy	AWS	X					
AATHI	Thurston Island	USA (UoW)	AWS	X		X			
AAUNI	Union Glacier	USA (ANI)	AWS	X		X			
AAVTO	Vito	USA (UoW)	AWS	X		X			
AAWFD	Willie Field	USA (UoW)	AWS	X					
AAWDB	Windless Bight	USA (UoW)	AWS	X					
AAZOR	Priestley Glacier (Zoraida)	Italy	AWS	X					
	PANDA-North	China/Australia	AWS			X			
AAASC	Nascent	USA	AWS						

Antarctic stations									
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>		<i>S</i>	<i>U</i>	<i>Key</i>	<i>GSN</i>	<i>GUAN</i>	<i>GAW</i>
	Lindsey Island	South Korea	AWS						
	Criosphera	Brazil	AWS						
	AWS 1	USA	AWS						
	Camp Maudheimvida	Finland	AWS						
	JASE 2007	Japan	AWS						
AAPDS	PANDA-South	USA (UoW) / China	AWS						
	Paola	Italy	AWS						
AAMP2	Marble Point II	USA (UoW)	AWS						
AALOR	Lorne	USA (UoW)	AWS						
AABAT	Alexander Tall Tower!	USA (UoW)	AWS						

Sub Antarctic stations (in Region I, III or V)											
<i>WMO no</i>	<i>Station</i>	<i>Operator</i>	<i>Type</i>	<i>S</i>	<i>RBSN</i>	<i>C</i>	<i>RBCN</i>	<i>GSN</i>	<i>U</i>	<i>GUAN</i>	<i>GAW</i>
61997	Isle Crozet	France		X	X	X	X	X			X
61998	Isle Kerguelen	France		X	X	X	X	X	X	X	X
68906	Gough Island	South Africa		X	X	X	X	X	X	X	
68992	Bouvetoya	Norway		NO	X	X	X	X			
68994	Marion Island	South Africa		X	X	X	X	X	X	X (NO)	Closed
88870	Mount Byron	UK	AWS	X		X					
88878	Pebble Island	UK	AWS	X		X					
88881	Mount Kent	UK	AWS	X		X					
88883	Weddell Island	UK	AWS	X		X	Add				
88889	Mount Pleasant Airport	UK		X	X	X	X	X	X	X	
88894	Mount Alice	UK	AWS	X		X					
88897	Sea Lion Island	UK	AWS	X		X					
88900	Bird Island	UK (BAS)	AWS	X		X	Add				X
88903	Grytviken	UK (BAS)	AWS	X	X	X	Add	X			X
88986	South Thule Island	South Africa	AWS	NO			Add				
93929	Enderby Island	New Zealand	AWS	X	X	X					
93947	Campbell Island	New Zealand	AWS	X	X	X	X	X			
94997	Heard Island (The Spit)	Australia		NO	X	X					
94998	Macquarie Island	Australia		X	X	X	X	X	X	X	X
95997	Heard Island (Atlas Cove)	Australia		NO							

Appendix 2

List of ships that operated in Antarctica during the 2015/16 season, with call signs and names.

The SCAR and WMO request that all ships operating in Antarctic waters should make meteorological observations and report them on the GTS.

The following ships, which entered Antarctic waters in 2015/2016, made meteorological reports, they may have reported from outside Antarctic waters after the date given here. For most ships the season begins in November or December and ends in March. Country is the country of registration, VOS is the country of recruitment. Monitoring is manual and may miss some ships.

Call sign	Name	Country	VOS	Arrive	Depart	Latest obs
5BMC3	Ortelius (Tourist)	Cyprus		2015 November		2016 February
9HJD9	Celebrity Infinity (Tourist)	USA	US	2016 February		2016 February
C6JC3	Bremen (Tourist)	Germany	DE	2015 December		2016 February
C6WR2	National Geographic Explorer (Tourist)	Bahamas	UK	2015 November		2016 February
C6YZ5	Seabourn Quest (Tourist)	Bahamas	US	2015 December	2016 February	2016 February
DBLK	RV Polarstern (Research)	Germany	DE	2015 December	2016 February	2016 February
DDUG	Alcyone (Yacht)	Germany		2016 January	2016 February	2016 February
DIXX	Dagmar Aaen (Cutter)	Germany		2016 January	2016 February	2016 February
FHZI	L' Astrolabe (Supply)	France	AU	2015 October		2016 February
HO-2847	Xplore (Yacht)	New Zealand		2016 January		2016 February
KAOU	Roger Reville (Research)	USA	US	2016 February	2016 February	2016 February
OXGN2	Mary Artica (Containership)	Denmark		2016 January	2016 February	2016 February
PBGH	Prinsendam (Tourist)	Netherlands	US	2016 January	2016 February	2016 February
PBQK	Plancius (Tourist)	Netherlands	NL	2015 November	2016 February	2016 February
PDAN	Zaandam (Tourist)	Netherlands	US	2015 December	2016 February	2016 February
PDZS	Europa (Ice strengthened tall ship)	Netherlands	FR	2016 January		2016 February
PWAR	Ary Rongel (Navy ice breaker)	Brazil	BR	2015 November		2016 February
PWPM	Almirante Maximiano (Navy ice breaker)	Brazil		2015 November		2016 February
SHIP	A			2016 January	2016 January	2016 January
SHIP	B			2016 February		2016 February
UCKZ	Akademik Fedorov (Research)	Russia	RU	2015 December	2016 February	2016 February
VNAA	RV Aurora Australis (Supply)	Australia	AU	2015 November	2016 January	2016 January
WBP3210	Nathaniel B Palmer (Oceanographic)	USA	US	2015 August		2016 February
WCX7445	Laurence M Gould (Oceanographic)	USA	US	2015 October		2016 February
WDG4379	Ocean Giant (Cargo)	USA		2016 January	2016 February	2016 February
WHKM	Maersk Peary (Oil Tanker)	USA	US	2016 January	2016 February	2016 February
ZDLP	RRS James Clark Ross (Research)	UK	UK	2015 November	2016 February	2016 February
ZDLS1	RRS Ernest Shackleton (Supply)	UK	UK	2015 December		2016 February
ZSNO	SA Agulhas II (Supply)	South Africa		2015 December		2016 February

Notes:

1. No Antarctic obs in December -
2. No Antarctic obs in January -
3. No Antarctic obs in February -
4. Obs received by UK Met Office, but frequently missing from Sailwx – Bremen, Dagmar Aaen, Europa, Plancius
5. Reports via Yotreps - Alcyone
6. Obs occasional – Bremen
7. SHIP A sailed roughly from Australia to Casey, which might indicate that it was VNAA
8. SHIP B was at 60°S 88.5°E and might be KAOU with an incorrect longitude

The following ships and yachts are known or suspected to have visited Antarctic waters in 2015/2016, but no synoptic reports were received whilst south of 60° (most records are via Palmer AIS). Some have position only reports from Antarctica on the sailwx website :

Call sign	Name	Country	VOS	Arrive/Present	Present/Depart	Comment/Last ob
PG3465	13 Beaufort (Yacht)	Netherlands		2016 February		Yotreps position
UAUN	Akademik Ioffe (Tourist)	Russia		2015 November	2016 February	
UAUO	Akademik S Vavilov (Tourist)	Russia		2015 December	2016 February	
	Alvfrida (Yacht)	Sweden		2016 January		
LAWR	Antarctic Sea (Fishing)	Norway		2015 December	2016 January	Fishing off Palmer
CCAQ	Aquiles (Supply)	Chile		2016 February		
DSQL7	Araon (Research)	Korea		2015 December	2016 February	2016 February
CCLA	ATF Lautaro (Supply)	Chile		2015 December	2016 January	
LOCX	Ara Islas Malvinas (Military)	Argentina		2016 February		
E5U2905	Australis (Yacht)	Cook Is		2015 December	2016 February	
7JBI	Asuka II (Tourist)	Japan		2016 January		
LOCB	Canal Beagle	Argentina		2016 January		
DB5470	Casa (Yacht)	Germany		2016 January		
9HUT9	Corinthian (Tourist)	Malta		2015 December	2016 February	
C6MY5	Crystal Symphony (Tourist)	Bahamas		2016 January	2016 February	
	Costa (Fishing)	Korea		2015 December		News report
PA6942	Dakota (Yacht)	Netherlands		2016 January		
L2EF	Dr Bernardo Houssay (Yacht)	Argentina		2016 January	2016 February	
L4EXP	Edition QQZ (Tourist)	Liberia		2015 December	2016 February	
V7HZ2	Enigma XK (FPV/Yacht)	Marshall Is		2015 December	2016 February	
A8QL4	Expedition (Tourist)	Liberia		2015 December	2016 February	
LADA7	Fram (Tourist)	Norway		2015 November	2016 February	
CCMF	Fuentealba (Military Ops)	Chile		2015 December		
L2AA	GC 24 Mantilla (Coastguard)	Argentina		2016 January	2016 February	
C6KA9	Hanseatic (Tourist)	Bahamas		2015 November	2016 February	
V2EI4	Hanse Explorer (Tourist)	Antigua		2015 December	2016 February	
GXRK	HMS Protector (Hydrographic)	UK	UK	2015 December	2016 January	News report
ZCRY8	Icebird (Yacht)	Cayman Is		2016 January	2016 February	
YJVT7	La Manche (Supply)	Vanuatu		2015 December	2016 January	
FLTU	L'Austral (Tourist)	W & F		2016 January	2016 February	
FIRS	Le Lyrial (Tourist)	W & F		2015 November	2016 February	
BZYC	Longda (Trawler)	China		2016 January	2016 February	
BZZQ6	Long Teng (Trawler)	China		2016 January	2016 February	
	Lu Qing Yuan Yu 107 (Fishing)	China		2015 December	2016 February	412331111
	Lu Qing Yuan Yu 108 (Fishing)	China		2016 January		412331112
C6TE3	National Geographic Orion (Tourist)	Bahamas		2015 December	2016 February	
C6ZR5	Ocean Diamond (Tourist)	Bahamas		2015 November	2016 February	
C6CA6	Ocean Endeavour (Tourist)	Bahamas		2015 November	2016 February	
C6US3	Ocean Nova (Tourist)	Bahamas		2015 December	2016 February	
V7IR6	Ocean Tramp (Yacht)	Marshall Is		2016 January		
CCOV	Oscar Viel (Supply)	Chile		2015 November	2015 December	
VJT6295	Pagodroma (Yacht)	Australia		2015 December		AIS 699 position
ZJL6951	Pelagic Australis (Yacht)	Virgin Is		2016 January	2016 February	
MWSC2	Podorange (Yacht)	UK		2016 January	2016 February	
UBST	Polar Pioneer (Tourist)	Russia		2015 December	2016 February	
NBTM	Polar Star (Icebreaker)	USA		2016 January		News report
C6TA8	Prince Albert II (Tourist)	Bahamas		2015 November	2016 February	Aka Silver Explorer
LNSK	Saga Sea (Trawler)	Norway		2015 December	2016 January	Fishing off Palmer
DPRL	Sarah W Vorwerk (Yacht)	Germany		2015 December	2016 Februar	
L2EE	SB 15 Tango (Tug)	Argentina		2016 January	2016 February	
C6PG6	Sea Adventurer (Tourist)	Bahamas		2015 November	2016 February	
C6BG2	Sea Explorer I (Tourist)	Bahamas		2015 November	2016 January	
C6PJ8	Sea Spirit (Tourist)	Bahamas		2015 November	2016 February	
EBBW	SPS RV Hesperides (Research)	Spain		2016 January	2016 February	
GUMF	Steve Irwin (NGO)	Netherlands		2016 February		News report
LOCS	Suboficial Castillo (SAR)	Argentina		2016 February		
6KCB	Sun Star (Fishing)	Korea		2015 December		News report
SM0HDX	SY-DUO (Yacht)	Sweden		2015 December		Yotreps position
FAB8461	Tarka (Yacht)	France		2016 January		
C6RW4	The World (Passenger)	Bahamas		2015 December	2016 January	
D6FH2	Ushuaia (Tourist)	Comoros		2015 November	2016 February	
OS8477	Vaihere (Yacht)	Belgium		2015 December	2016 February	
UGWJ	Vasiliy Golovnin (Tanker)	Russia		2016 February		
ZGBG9	Vava II (Motor Yacht, 96m)	Cayman Is		2016 January		
BNSK	Xue Long (Supply)	China		2015 November	2016 February	

The following launches are known to have been in Antarctic waters in 2015/16, (records are via Palmer AIS). Launches are not expected to make meteorological observations :

MMSI	Name	Country	Arrive/Present	Present/Depart	Parent ship
982589324	Amundsen Tender 4	Norway	2015 December		Fram
982589325	Wilhelmina Tender 5	Norway	2016 January	2016 February	Fram
982589326	Anneli Tender 6	Norway	2015 December	2016 February	Fram
983110011	FRB	Bahamas	2015 December		The World
985780037	Le Lyrial Tender 2	W&F	2016 January		Le Lyrial
985780047	Le Lyrial Tender 12	W&F	2016 February		Le Lyrial
985780024	L'Austral ZOD 01	W&F	2016 January	2016 February	L'Austral
985780025	L'Austral ZOD 02	W&F	2016 January	2016 February	L'Austral
985780026	L'Austral ZOD 03	W&F	2016 January		L'Austral
985780027	L'Austral ZOD 04	W&F	2016 January	2016 February	L'Austral
985780028	L'Austral ZOD 05	W&F	2016 January	2016 February	L'Austral
985780029	L'Austral ZOD 06	W&F	2016 January		L'Austral
985780030	L'Austral ZOD 07	W&F	2016 January	2016 February	L'Austral
985780031	L'Austral ZOD 08	W&F	2016 January	2016 February	L'Austral
985780032	L'Austral ZOD 09	W&F	2016 January	2016 February	L'Austral
985780033	L'Austral ZOD 10	W&F	2016 January		L'Austral
985780034	L'Austral ZOD 11	W&F	2016 January	2016 February	L'Austral
985780035	L'Austral ZOD 12	W&F	2016 January	2016 February	L'Austral
983110034	S'bn Quest Zodiac 8	Bahamas US	2016 February		Seabourn Quest
983110036	S'bn Quest Zodiac 4	Bahamas US	2016 February		Seabourn Quest
983110038	S'bn Quest Zodiac 10	Bahamas US	2016 February		Seabourn Quest
983110039	S'bn Quest Zodiac 5	Bahamas US	2016 February		Seabourn Quest
983110040	S'bn Quest Zodiac 2 & 1	Bahamas US	2016 January	2016 February	Seabourn Quest
983110041	S'bn Quest Zodiac 6	Bahamas US	2016 January	2016 February	Seabourn Quest
983681382	LMG Zodiac 1	USA	2016 January		Laurence M Gould
983681383	LMG Zodiac 2	USA	2016 February		Laurence M Gould
	Landing Craft	USA	2016 January		Palmer Station ?
369970821	Palmer Skiff	USA	2016 January	2016 February	Palmer Station
369970813	Palmer Zodiac 1	USA	2016 January	2016 February	Palmer Station
369970817	Palmer Zodiac 5	USA	2016 January	2016 February	Palmer Station
369970818	Palmer Zodiac 6	USA	2016 January	2016 February	Palmer Station
369970819	Palmer Zodiac 7	USA	2016 January	2016 February	Palmer Station
369970820	Palmer Zodiac 8 OSAR	USA	2016 January	2016 February	Palmer Station
TNG02	Tango2 (Law enforcement)	Argentina	2016 February		SB Tango

A list of IAATO member vessels that may visit Antarctica is at <http://apps.iaato.org/iaato/vessel/listVessels.jsp>.

The following ships may or have operated in Antarctica over the last five years, but are not positively known to have done so in 2015/16. The list has not been fully updated with VOS status. The latest report is either the date of any noted on the GTS or the last time the ship was known to be in Antarctic waters, but may not be definitive as this section is updated on an ad-hoc basis:

Call sign	Name	Country	Last Antarctic report	Last in Ant.	Latest obs/Comment
KS085	[Seakeepers AWS]	USA	2010 December		2011 January 2011 January
KS094	[Seakeepers AWS]	USA	2010 December		2011 January 2011 January
5KMK	20 de Julio (Military Ops)	Colombia	2015 January		2015 February
	Ady Gil (NGO)	New Zealand	2010 January		Sank after collision
ZSAF	Agulhas (Expedition)	South Africa	2013 January		2013 February 2014 April
UBNF	Akademik Shokalskiy	Russia	2013 December		2014 January 2013 December
UBXH3	Akademik Tryoshnikov (Research)	Russia	2014 March		2014 April 2014 April
PBAD	Amsterdam (Tourist)	Netherlands	2012 February		2012 February 2013 January
PEAR	Anne Margaretha (Yacht)	Netherlands	2015 January		2015 March
	Antarctic Chieftain (Fishing)	Australia	2015 February		News report
HQXJ2	Antarctic_Dream (Tourist)	Honduras	2011 November		2012 March
C6MA9	Arctic P (Yacht)	Bahamas	2013 January		
SGBF	Arianna (Yacht)	Sweden	2015 January		
V7WR4	Asteria (Pleasure)	Marshall Is	2013 December		2014 March
PCVX	Atlasgracht (Cargo)	Netherlands	2010 March		
9HOB8	Azamara Journey (Passenger)	Malta	2015 January		IAATO 15/16
9HOM8	Azamara Quest (Tourist)	Malta	2013 January		Reporting in February
CBTZ	Betanzos (Fishing)	Chile	2013 December		
V7UH7	Big Fish (Pleasure)		2011 January		
5VBR5	Bob Barker (NGO)	Netherlands	2015 February		News report
	Braveheart	New Zealand	IAATO 15/16		
UBRF9	Chiyo Maru 3 (Trawler)	Russia	2011 December		Nearby UAGL
MKCG8	Dana Felicia (Yacht)	UK	2013 December		2014 January 2014 January (1)

SIGF	Dawnbreaker (Sailing Yacht)	Sweden	2012 January		
C6ZV6	Delphin (Tourist)	Bahamas	2013 January	2013 February	IAATO 14/15
ZCTD	Deniki (Pleasure yacht)	Cayman Is	2011 December	2012 January	
DMMC	Deutschland (Tourist)	Germany	2010 February		
ZCGL9	Drumbeat (Yacht)	Cayman Is	2015 January	2015 February	
2ATM7	Elinca (Yacht)	UK	2013 December	2013 December	2013 December
	Endurance of Antarctica		IAATO 13/14		
ZCDZ4	Erica XII (Sloop)	Bermuda	2013 January	2013 February	
ZR2369	Faraway (Yacht)	South Africa	2013 December	2014 January	2014 January (1)
2EHX6	Fidelis (Yacht)	UK	2015 January		
FLES	Fleur Australe (Yacht)	France	2013 December	2013 December	2013 December
BAOC	Fu Rong Hai (Trawler)	China	2013 February		
	Gojira (NGO)		2011 January		News report
	Golden Fleece (Yacht)		2009 January	IAATO 15/16	
C6OX6	Hamburg (Tourist)	Bahamas	2012 December	2013 January	
	Hans Hansson		IAATO 15/16		
2CEK7	Happy Thaurus	UK	2012 January		
	HMNZS Otago	New Zealand	2013 November	2014 January	Obs not put on GTS
ZMFS	HMNZS Wellington	New Zealand	2015 January		News report
GCUP	HMS Scott	UK	2011 February		
ZCYH4	Hortense (Yacht)	Cayman Is	2013 January	2013 February	
VJT6066	Howard Burton (Pleasure Craft)	Australia	2015 January		AAD AIS
UIFC	Igarka (Cargo)	Russia	2010 January		
ZR2219	Imvubu (Yacht)	South Africa	2014 January		
V7DM2	Insignia	Marshall Is	2011 January		
VLMJ	Investigator	Australia	2015 February		AIS 116 position
FHNR	Isatis (Yacht)	New Caledonia	2010 December	2011 February (1)	2011 April (1)
SPG3305	Isfuglen (Yacht)	Poland	2015 January		
	Island Sky		IAATO 13/14		
UCJE	Ivan Papanin (Container ship)	Russia	2011 November		(3)
DSBC	Joides Resolution (Research)	USA	2010 February		
UCJP	Kapitan Dranitsyn	Russia	2014 February	2014 February	2016 January
2CLQ7	Katharsis II (Yacht)	UK	2015 January	2015 February	AIS 116 position
	Kotick (Yacht)		IAATO 15/16		
	Kunlun (Fishing)	Eq Guinea	2015 January	2015 February	News report
FZY1954	La Francoise (Yacht)	France	2011 January	2011 January (1)	
EBDG	Las Palmas (Tug)	Spain	2011 December	2012 March	
	LB-01		2014 January		
FLSY	Le Boreal (Tourist)	W & F	ZZ 2014 December	2015 February	IAATO 15/16
FIHV	Le Soleal (Tourist)	W & F	ZZ 2014 December	2015 March	2016 January
	Le Sourire (Yacht)		IAATO 15/16		
HBV4333	Libellule (Yacht)	Switzerland	2015 January		
VSBL5	Licorne (Yacht)	Bermuda	2011 January		
GHJV	Lord Nelson (Yacht)	UK	2014 February	2014 March	2014 March
	Louise (Yacht)		IAATO 13/14		
WMLI	Maersk Illinois (Oil Tanker)	USA	2014 January	2014 February	2014 February
UDYN	Maksim Starostin (Trawler)	Russia	2010 March		
UFKU	Marina Cvetaeva (Passenger)	Russia	2011 January	2011 March	
WDF4078	Moana Wave (Research)	USA	2011 March		
UYDV	More Sodruzhestva (Fishing)	Ukraine	2015 February		
ZCIS	My Octopus	Cayman Is	2011 February		
V7MH7	MY Suri (Yacht)	Marshall Is	2012 December	2013 January	
2FZX2	Nimrod (RIB)	UK	2013 January		From HMS Protector
JJCJ	Nisshin Maru (Whaler factory ship)	Japan	2014 January	2014 February	News report
SMLQ	Oden (Oceanographic)	Sweden	2010 December	2011 February	2016 February
PGNP	Oosterschelde (Tourist)	Netherlands	2014 January	2014 January	2014 January
MWSE2	Pakea Bizkaia (Yacht)	UK	2013 January		
	Paradise (Yacht)		IAATO 15/16		
PY2KAK	Paratii 2 (Yacht)	Brazil	2012 March	2012 April	
	Pelagic (Yacht)		IAATO 15/16		
WSC2276	Point Sur (Dive Vessel)	USA	2013 January	2013 February	
8PPK	Polar Star (Tourist)	USA	2011 January		
L2AE	Prefecto Derbes (Coastguard)	Argentina	2015 January		
UAKA	Professor Molchanov (Tourist/Research)	Russia	2010 March		
LOPD	Puerto Deseado (Yacht)	Argentina	2013 February		2015 January
ZGCI4	Pumula (Yacht)	Cayman Is	2015 January		
LW2760	Quijote (Yacht)	Argentina	2013 February		
WTEC	Ron Brown	USA	Came close in 2014	January	2016 February
MLRM6	RRS James Cook (Research)	UK	2010 December	2011 February	2016 February
WECB	RV Melville (Research)			2013 October	
ZMFR	RV Tangaroa (Research)	New Zealand	2013 February	2013 March	2014 July
FGE6996	Safari (Yacht)	France	2015 January	2015 February	
VJN4108	Sam Simon (NGO)	Australia	2015 February		News report
ZM2534	San Aotea II (Long-liner)	New Zealand	2014 January		Internal news
ZMGO	San Aspiring (Trawler)	New Zealand	2011 December		Rescue UAGL
	Santa Maria Australis		IAATO 15/16		
9HB2145	Scorpius	Malta	2012 March	2012 April	
V7WD8	Sea Explorer I (Tourist)	Marshall Is	2014 November	2014 December	Presumably re-registered

LKYA	IAATO 15/16 Seljevaer (Trawler) Selma Expeditions (Yacht)	Norway	2011 December		Stuck in pack near UAGL IAATO 15/16 2013 January
C6VV8	Seven Seas Mariner		2011 February		
FGF9553	Shag 2	France	2012 January		
PHDD	Sherakhan (Yacht)	Netherlands	2013 February		
JFCF	Shonan Maru #2 (Whale Research)	Japan	2014 February		
JFCF	Shonan Maru #2 (Whaler)	Japan	2013 February		News report
JFCF	Shonan Maru No 2 (Whaler)	Japan	2010 January		News report
URBX	Simeiz (Fishing)	Ukraine	2015 March		
	Songhua (Fishing)	Eq Guinea	2015 January		News report
VLHJ	Southern Surveyor			2013 July	
UAGL	Sparta (Trawler)	Russia	2011 December		Holed in Ross Sea
	Spirit of Enderby (Tourist)		IAATO 15/16		
	Spirit of Sydney (Yacht)		IAATO 15/16		
ZCDD6	Star Princess (Tourist)	UK	2010 December	2011 January	2013 January
3ETH2	Sun Laurel (Tanker)	Panama	2013 February	2013 March	News report
FVNM	Tara [Ex Antarctica] (Research)	France	2011 January	2011 January	2014 November
ABCD1	Terra Nova (Tender)	UK	2013 December	2014 February	Boat from HMS Protector
KTDQ	Thomas G Thompson (Research)	USA	2010 February		2012 January
	Thunder (Fishing)	Nigeria	2015 January		News report
PHFL	TIMCA (Cargo)	Netherlands	2013 April	2013May	
V7GFS	Triton (Yacht)	Marshal Is	2015 February		
MPTU5	Uhuru (Yacht)	UK	2011 January		
JPAT	Umitaka Maru (Fisheries research)	Japan	2013 January	2013 January	2015 October
YM8176	Uzaklar II (Yacht)	Turkey	2012 February		
PHEO	Veendam (Tourist)	Netherlands	2013 January	2013 February	2015 April IAATO 15/16
	Vertigo (Yacht)				2015 November
VHMW	Whale Song (Research)	Australia	2014 January	2014 January	2013 October (1)
DD2MM	Xenia II	Germany	2013 August	2013 October	
2FZW8	Yelcho (FRC)	UK	2014 March		From HMS Protector
	Yongding (Fishing)	Eq Guinea	2015 January	2015 February	News report
JPPV	Yushin Maru #2 (Whaler)	Japan	2014 January	2014 February	News report
	Yushin Maru #3 (Whaler)	Japan	2014 February		News report
JLZS	Yushin Maru (Whaler)	Japan	2014 February		News report

The following launches are known to have been in Antarctic waters in the last five years, (records are via Palmer AIS). Launches are not expected to make meteorological observations :

Call sign	Name	Country	Arrive/Present	Present/Depart	Parent ship
2ENT7	James Caird IV (Survey Boat)	UK	2015 January		HMS Protector
2FZX4	MIB1	UK	2014 November		HMS Protector
2FZX5	W2 (Launch ?)	UK	2013 January		HMS Protector
578000501	LB9	W & F	2015 January	2015 February	Le Boreal
983110032	Zodiac 7	Bahamas	2014 December		Seabourn Quest
983110040	Zodiac 1	Bahamas	2014 December		Seabourn Quest
983110041	Zodiac 3	Bahamas	2014 December		Seabourn Quest
985780001	LS AXE01	W & F	2014 December		Le Boreal
985780002	LS AXE02	W & F	2015 January		Le Boreal
985780003	LS AXE03	W & F	2015 January	2015 March	Le Boreal
985780004	LS AXE04	W & F	2014 December	2015 January	Le Boreal
985780005	LS AXE05	W & F	2015 January		Le Boreal
985780006	LS AXE06	W & F	2014 December	2015 March	Le Boreal
985780008	LS AXE08	W & F	2014 December	2015 January	Le Boreal
985780009	LS AXE09	W & F	2015 January		Le Boreal
985780010	LS AXE10	W & F	2015 January		Le Boreal
985780013	Zodiac 2	W & F	2015 January	2015 February	Le Boreal
985780014	AXE 3	W & F	2015 January	2015 February	Le Boreal
985780015	AXE 4	W & F	2015 January	2015 February	Le Boreal
985780016	AXE 5	W & F	2015 January		Le Boreal
985780017	AXE 6	W & F	2015 February		Le Boreal
985780018	AXE 7	W & F	2015 January	2015 February	Le Boreal
985780019	AXE 8	W & F	2015 January		Le Boreal
985780021	AXE 10	W & F	2015 January	2015 February	Le Boreal
985780022	AXE 11	W & F	2015 January	2015 February	Le Boreal
985780023		W & F	2015 February		Le Boreal
983681381	Zodiac 1	USA	2015 April		Palmer Station