

WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR BASIC SYSTEMS

OPAG ON INTEGRATED OBSERVING SYSTEMS

**COORDINATION MEETING ON ANTARCTIC METEOROLOGY
AND RELATED IPY ACTIVITIES**

ST.-PETERSBURG, RUSSIAN FEDERATION

21 - 23 November 2005

FINAL REPORT



WMO General Regulations 42 and 43

Regulation 42

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups, the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

Regulation 43

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

EXECUTIVE SUMMARY

The Coordination Meeting on Antarctic Meteorology and related IPY Activities was held at the Headquarters of the Arctic and Antarctic Research Institute (AARI) of Roshydromet, St. Petersburg, Russian Federation, from 21 to 23 November 2005. The meeting reviewed the status of the collection of observational data within the Antarctic, their insertion into the GTS and their distribution on the GTS. The meeting reviewed the monitoring results of the operation of the WWW, in particular the results of the 2005 specific monitoring on the Exchange of Antarctic data and the results of the 2005 exercises of the Special MTN monitoring. The meeting noted that despite the difficult conditions and problems of logistics, the overall implementation of the Antarctic Basic Synoptic Network (ABSN) and Antarctic Basic Climatological Network (ABCN) continued to be generally stable and the number of reports received at MTN Centres (66% - SYNOP, 61% - TEMP, 69% - CLIMAT and 77% - CLIMAT TEMP) was either higher or around the global average number of reports (77% - SYNOP, 66% - TEMP, 65% - CLIMAT and 68% - CLIMAT TEMP) received for 2004. However, of concern is the continuing decreasing trend of the level of implementation of upper-air stations (making 2 observations per day) from year 2000 onwards.

The meeting found some discrepancies in the availability of the data between the monitoring centres. The meeting requested the Secretariat to follow-up these discrepancies when analyzing the results of the next monitoring exercises. The meeting reviewed present arrangements for the reception of data and products at Antarctic stations that include various options: the reception of data on Antarctic point-to-point circuits, the reception of data on point-to-multipoint circuits (HF broadcasts) operated by Antarctic stations, the reception of data on point-to-point circuits linking the Antarctic stations to GTS centres located outside Antarctica, the reception of data on point-to-multipoint circuits (satellite distribution systems like WEFAX and MDD). The meeting agreed that the operation of the Antarctic data collection and distribution systems was satisfactory. The meeting reiterated the need to discontinue where possible the HF broadcasts and consider alternative means of receiving the data and products. Based on the operational experience by countries in the Antarctic, draft amendments to the *Manual on the GTS – Vol. II – The Antarctic* (WMO-No. 386). have been proposed. Following the discussion on functions for stations in the Antarctic providing data-processing and other meteorological services, including services for shipping, aircraft, local operations and research, amendments were proposed to the *Manual on the Global Data-Processing and Forecasting System, Volume II, Regional Aspects, The Antarctic*, (WMO-No. 485).

The meeting reviewed and made proposals to amend the list of stations comprising both the ABSN and the ABCN. The proposed lists will be circulated among Members operating stations in Antarctica for their comments prior to the session of the EC WG on Antarctic Meteorology in 2006. The meeting carried out a comprehensive review of planning and coordination activities related to the International Polar Year 2007-2008 (IPY) in the Antarctic. Experts from Argentina, Australia, Chile, Italy, Russian Federation and UK briefed the meeting on their national programmes and international cooperation envisaged within IPY. Based on this information, the meeting decided to launch a project proposal for IPY with a goal of creating a definitive, high quality data set of standard and complementary meteorological observations for the Antarctic during IPY for use in climate research and applied investigations (the short title is COMPASS) and submit it to the Joint Committee for IPY by 31 January 2006. The outcome of the meeting will be submitted to the Chairman of the EC Working Group on Antarctic Meteorology and then to the upcoming session of the WMO Executive Council. The Meeting adjourned on 23 November 2005 at 1.00 p.m.

1. ORGANIZATION OF THE SESSION

The Coordination Meeting on Antarctic Meteorology and related IPY Activities was held at the Headquarters of the Arctic and Antarctic Research Institute (AARI) of Roshydromet, St. Petersburg, Russian Federation, from 21 to 23 November 2005. The list of participants is given in Annex I.

1.1 Opening of the meeting

1.1.1 The meeting was opened at 10.00 a.m. on Monday 21 November 2005 by Dr I. Frolov, Director of the Arctic and Antarctic Research Institute. He welcomed the participants to St. Petersburg. Dr Frolov underlined the importance of standard meteorological observations in supporting of climate studies and other activities in the Antarctic. A week ago the Scientific Symposium "Meteorological studies in Antarctic" was held in AARI, which summarized the 50-years results of Antarctic climate studies based on meteorological measurements and numerical modeling. Russian Antarctic stations transmit their meteorological messages into GTS according to the WMO procedures. However, regular special monitoring of the availability (reception) of meteorological reports over the GTS is necessary as a very important tool for the Antarctic stations information exchange control. The pre-IPY activities and IPY active phase will deliver new data about climate change in the polar and global atmosphere, and these activities will become an important goal for wide user community. In this context, the coordination of international efforts in Antarctic operational meteorology should be considered as a significant scientific and applied task. He assured that AARI will be doing its utmost to contribute to the success to the meeting and wished a nice stay in the city of Saint-Petersburg.

1.1.2 Dr Yu. Tsaturov welcomed the participants on behalf of Dr A. Bedritsky, Head of Roshydromet, Permanent Representative of Russian Federation with WMO, President of WMO. Dr Tsaturov attached a particular importance to the Coordination meeting, especially in the elaborating specific proposals and recommendations to improve the availability and exchange of meteorological information from the Antarctic observing network. He summarized the on-going activities of Roshydromet through the Arctic and Antarctic Research Institute in supporting WMO Antarctic Activities programme. A valuable input provided by Russian specialists in the development and implementation of the international READER project and also in preparation of the Handbook on CLIMAT and CLIMAT TEMP Reporting published by WMO in four languages. The important role of the IPY in supporting meteorological and climatological research in the Antarctic was underlined. In this connection he stressed the need for better international coordination of observing programmes in the Antarctic. He wished every success to the participants in accomplishing the tasks of the meeting.

1.1.3 Dr A. Karpov welcomed the participants on behalf of the Secretary-General of WMO. A sincere thanks was expressed to the Roshydromet and in particular, to Dr A. Bedritsky, for the kind invitation to hold the Coordination Meeting on Antarctic Meteorology and related IPY Activities in Russia. Special thanks were extended to the Arctic and Antarctic Research Institute of Roshydromet in their capacity to host the meeting. He stressed the importance of this meeting in improving the quality and quantity of data availability from Antarctica, and that the opportunity presented itself at this meeting to make additions and corrections to the documentation on the availability of Antarctic data. For this purpose the meeting will be paying close attention to the Antarctic monitoring results, and looking to correct any deficiencies. It was also stressed that the meeting will be expected to make significant progress to the plans for the International Polar Year 2007-2008. He wished every success to the experts in developing proposals and recommendations of the meeting and a nice stay in the historical city of Saint-Petersburg.

1.1.4 Dr E. Sarukhian welcomed the participants on behalf of the WMO/ICSU Joint Committee for IPY 2007-2008. He pointed out that IPY, initiated in parallel by WMO and International Council for Science (ICSU), is an intensive burst of internationally coordinated, interdisciplinary, scientific research and observations focused on the Earth's polar regions. It is now in an active phase of preparation and will be closely related to the scientific and operational

activities carried out by nations in the Antarctic on a permanent basis. Dr Sarukhanian urged participants to use IPY as a unique opportunity to extend the activities of their countries in the area of Antarctic Meteorology and to provide a substantial contribution to the IPY implementation that will start on 1 March 2007.

1.2 Election of the Chairman

Dr Jonathan Shanklin was unanimously elected chairman of the meeting.

1.3 Adoption of the agenda

The agenda as adopted by the meeting is given in Annex II.

1.4 Working arrangements

The meeting agreed on its working hours and adopted a tentative work plan for consideration of the various agenda items (See Annex III).

1. OPERATION OF THE EXCHANGE OF OBSERVATIONAL DATA AND PROCESSED INFORMATION CONCERNING THE ANTARCTIC

2.1 Status of implementation of the collection of data and distribution of products

2.1.1 The Secretariat presented a compilation of the information related to the collection of data from the 74 ABSN stations, including the collecting centre associated to the station, the GTS Regional Telecommunication Hub (RTH), which is the first RTH to relay the data on the GTS and the telecommunication means used to transmit the data from the station to the collecting centre. The meeting reviewed this list and made several corrections. The resulting corrected list is presented in Annex IV.

2.1.2 The Secretariat also proposed some draft amendments to the Manual on the GTS - Volume II - The Antarctic. The meeting discussed these proposals, and made some further changes to the text, which is given in Annex V.

2.1.3 The meeting was informed that data from Zhongshan are transmitted to Davis once per day by HF UHF voice, when it passes the previous four 6 hourly SYNOPs. On behalf of the Chinese Meteorological Agency and the Chinese Antarctic Research Expedition, the Australian Bureau of Meteorology is investigating with the Australian Antarctic Division improved methods of transmitting data from Zhongshan to Davis.

2.1.4 The meeting was also advised that Australia has a range of mechanisms for providing products to Antarctic stations, especially those products tuned for East Antarctica. These include use of the internet, HF broadcasts from VMC Charleville and VMW Wiluna in Australia, satellite circuits from Melbourne and satellite circuits from the AMC at Casey.

2.1.5 Argentina advised that at the Antarctic Meteorological Centre Marambio (AMC MBI) is located at Base Marambio (89055), where is also located the Collecting Center for Antarctic Data and Broadcasting Center (ADCC/BC) for the meteorological products produced by the AMC MBI itself.

2.1.6 Marambio Base has the following links for the meteorological exchange and broadcasting of AMC MBI products:

- AMC MBI – RTH BUE: VSAT link, point to point at 64 Kbps, alternative AFTN via VSAT
- AMC MBI – RSMC-NMC BUE Internet via VSAT
- AMC MBI – ETC SOUTHBURY (USA): Via RTH SABM and KWBC, via GTS
- AMC MBI – ANTARCTIC STATIONS: HF

Base Marambio also maintains a HF radio broadcast from station LUU

2.1.7 Direccion Meteorologica de Chile reported that Chilean meteorological activities are mainly concentrated in the Antarctic Meteorological Center (AMC) "Eduardo Frei Montalva" located at King George Island. The AMC Frei acts as Antarctic Collecting Center and as a Forecasting Regional Center. Chile has another weather station, 89059 Bernardo O'Higgins, which carries out three-hourly synoptic observations.

2.1.8 The British Antarctic Survey informed the meeting that Rothera Station (89062) is the collection centre for data from Vernadsky (89063), Fossil Bluff (89065) and itself, and the data are emailed to the UK Met Office via a permanent satellite link (VSAT). Palmer Station (89061) and Halley also return their data via VSAT. In addition data from many AWS is distributed via Argos. To improve the timely availability of Argos data, the DCS/TIP data from NOAA HRPT transmissions has been collected at Rothera and sent by ftp to the Argos centre at Toulouse since October 2004.

2.1.9 The meeting was informed that the Italian telecommunication system was undergoing a major modification following the unavailability of some nodes during 2004. The technical problems were overcome subsequent to the meeting, and full operational GTS distribution resumed at the beginning of the Antarctic summer 2005-2006. AWS data from 13 AWS stations in Victoria Land are collected by the ARGOS System.

2.1.10 The meeting was presented with a review of AARI's "Antarctic data" working group, which was created for the collection, data quality control and archiving of operational meteorological information from Russian Antarctic stations transferred through the telecommunication channel, and for the national climate data base (<http://south.aari.nw.ru>). AARI specialists collected 100 % of current surface and upper air information.

2.1.11 From the information given by the delegates, the meeting noted that some stations were only able to pass data intermittently to their collecting centre. The meeting urged Members operating such stations to try and improve the timeliness of the data.

2.2 Review of the monitoring on the exchange of Antarctic data

2.2.1 The WMO secretariat presented a comprehensive review of the results of the monitoring of the exchange of Antarctic data. The specific monitoring was carried out from 1 to 15 January 2005 for SYNOP, TEMP, CLIMAT and CLIMAT TEMP reports from ABSN/ABCN stations. Most of the SYNOP and TEMP reports were received within the three hours following the observation time. While 51 per cent of the SYNOP reports were received by RTH Exeter from the 75 ABSN stations within one hour after the observation time, only 28 per cent of the expected reports collected through ARGOS from 39 ABSN stations were received in Exeter within one hour after the observation time. Since the ARGOS system is based on the use of near-polar-orbit satellites, the collection and the retransmission of the collected data to earth station (after their storage in the satellite) is possible when the Antarctic stations and the earth station are respectively in the field of view of the satellite, and these conditions lead to delays in the data collection. It should also be noted that during the monitoring no SYNOP reports were received from eleven ABSN stations. 53 percent of TEMP reports were received by RTH Exeter with one hour of the observation time. The meeting concluded that although there was a clear shortfall in the implementation of the ABSN, the majority of reports from the active stations were received promptly.

2.2.2 48 percent of expected CLIMAT reports were received between 1 to 15 January and 69 per cent of expected CLIMAT TEMP reports were received during the same period.

2.2.3 The session was advised that Antarctic bulletins were received during the January 2005 SMM exercise that had no corresponding abbreviated headings entries in Volume C1 of WMO Publication No. 9 – Catalogue of Meteorological Bulletins. The session invited the relevant WMO

Members to send the required updating to the catalogue of Meteorological Bulletins to the Secretariat. In addition the session invites the WWW centres to investigate the reasons for the discrepancies in the monitoring results, in particular by comparing their monitoring results to those of other centres.

2.2.4 The January 2005 monitoring results as collated at RTH Melbourne were reported to the meeting. It was noted that there are some AWSs incorrectly assigned to this RTH. The Australian representative indicated that he would investigate why several Australian Antarctic Division AWSs were not reporting

2.2.5 The representative from Argentina reported that the monitoring of the Argentine Antarctic Stations incoming data to the Regional Telecommunication Hub Buenos Aires (RTH BUE) performed during 1 to 15 January 2005 showed satisfactory results. He advised that the lower number of data received came from 89053 Jubany and 89066 San Martin stations were a result of a reduced observational schedule, nevertheless, they did send in their bulletins properly. It is also noted that an additional Argentine Antarctic station 88963 ESPERANZA was not included in the stations to be monitored. For CLIMAT reports, 100% of Marambio and Frei Collection Centre bulletins were transmitted from the RTH Buenos Aires (SABM) before the 6th day of January 2005.

2.2.6 The representative from Chile advised the session that almost all the synoptic reports collected at the AMC Frei, namely 89056 Frei, 89059 O'Higgins, 89054 Dinamet, 89058 Great Wall and 89251 King Sejong, are received in the Santiago collecting center and then forwarded to the Buenos Aires Center for international distribution. Regarding CLIMAT reports, the meeting was advised that only reports from Frei are transmitted to Santiago, and that neither AMC Frei nor Santiago received CLIMAT information from Dinamet, Great Wall and Sejong stations, which may be reporting directly from their respective countries.

2.2.7 The representative from the UK provided a list of many deficiencies that had been detected during the January 2005 Specific Monitoring and in more recent monitoring of data from RTH Exeter. The session was also advised that 16 ships operated in Antarctic waters during 2004/2005 and provided meteorological reports. Four other ships are known to have visited Antarctica during 2004/2005, but no reports were received.

2.2.8 The representative from Italy advised the session that the January 2005 monitoring results for Italian data were severely interrupted because of ongoing modification to the telecommunication system since 2004. Full operational GTS distribution is expected again at the beginning of the Antarctic summer 2005-2006. In addition TEMP messages have been not available during summer 2004-2005 because of a failure of the ground radio sounding system.

2.2.9 The representative from the Russian Federation noted that according to the January 2005 specific Monitoring Report all Russian Antarctic stations transmitted the expected number of SYNOP messages. The TEMP reports were complete also, however stations 89512 and 89592 make one radiosonde launch per day (00 UTC) only, except during special observation periods. Therefore, during the period of special monitoring all radiosonde data from Russian Antarctic stations were distributed on the GTS. The information presented from the Specific Monitoring indicates the daily averaged data of TEMP reports as 50 %, it is due to the absence of 12 UTC radiosonde launches at the station 89512 and 89592. The CLIMAT reports from 89050, 89512, 89574, 89592 and 89606 are obtained successfully.

2.2.10 The meeting suggested that there might be two areas where there were problems with the GTS: in the relay of SYNOP messages from India to Europe, and in the relay of climate messages from Santiago and Moscow.

2.2.11 The meeting noted that data from some AWSs in the ABSN were available from national operators, but were not being distributed over the GTS. The meeting suggested that this might be because ARGOS did not have the necessary information to release the data.

2.2.12 The meeting also noted that data from some stations in the ABSN/ABCN required calibration and quality control, often many months after observations, before it was suitable for climatic studies. The meeting encouraged Members operating these stations to submit delayed CLIMAT messages to the appropriate GCOS centres by e-mail (GCOS.NCDC@noaa.gov, joern.kallies@dwd.de, fd_clim@hq.kishou.go.jp and Udo.Schneider@dwd.de). The meeting welcomed the publication of the Handbook on CLIMAT and CLIMAT TEMP reporting in four WMO working languages and the organization of a series of training seminars in the regions on the basis of this publication and special software developed for compiling the reports.

2.3 Status of implementation of the ABSN and the ABCN

2.3.1 The Secretariat presented a detailed review of the status of implementation of the Antarctic Basic Synoptic Network (ABSN) and the Antarctic Basic Climatological Network (ABCN). The level of implementation of the ABSN surface stations in 2004 that make observations at the 4 main standard hours per day amounts to 92 per cent, showing a slight decrease in comparison to 98 per cent in 2000. Overall the number of stations in the ABSN has also decreased from 81 stations in 2000 to 75 stations in 2004. However, the results of the Annual Global Monitoring (AGM) in October 2004 show that the number of reports actually received compared to the number of reports expected remained almost unchanged from 67 per cent in 2000 to 66 per cent in 2004.

2.3.2 Regarding the implementation of ABSN upper-air stations in the Antarctic the number of radiosonde stations (13) and radiowind stations (13) has remained almost unchanged during the period 2000 to 2004. However, the level of implementation of the ABSN upper-air stations (making 2 observations per day) again decreased, continuing the trend from 62 per cent in 2000 to 46 per cent in 2004. The results of the Annual Global Monitoring (AGM) in October 2004 show that the number of reports actually received compared to the number of reports expected also decreased from 63 per cent in 2000 to 61 per cent in 2004. The meeting noted that the decline in the implementation of the ABSN upper-air stations was due to the great expense of meeting the full programme and noted with appreciation the efforts of those Members who in spite of difficulties continue to maintain the once daily coverage in Antarctica.

2.3.3 The ABCN was rationalized and reduced in size in November 2002. 29 synoptic stations produced CLIMAT during 2004, which is a level of implementation of around 79 per cent. The results of the AGM in October show that the number of reports actually received, compared to the number of expected reports was 69 per cent.

2.3.4 Since its establishment in late 2002, the ABCN is comprised of 13 upper-air stations producing CLIMAT TEMP reports. The current level of implementation of these stations in comparison to 2001 remained above 75 per cent. The results of the Annual Global Monitoring (AGM) show that the number of reports actually received compared to the number of expected reports increased from 67 per cent in 2001 to 77 per cent in 2004.

2.3.5 The representative from Australia advised of five additional operational AWS that should be added to the ABSN, namely 89616, 89686, 89620, 89807 and 89815. Also there is one deletion, 89618 that closed in February 2004. In addition there are three other AWS transmitting data via ARGOS that do not have WMO index numbers. The Australian Bureau of Meteorology will apply for station numbers, after which they can be added to the ABSN.

2.3.6 The representative from Argentina advised that Argentina maintains six surface synoptic stations in the Antarctic. All six stations are included in the ABSN and ABCN, and three of them (88963 Esperanza, 88698 Orcadas and 89055 Marambio), are included in the GSN. Marambio also provides environmental observations (UV radiation, ozone and others). The session also

noted with satisfaction that 88968 Orcadas recently celebrated its centenary as a meteorological and geo-magnetic observatory, as it started observations in 1904.

2.3.7 The session was informed that station 89057 Base Arturo Prat closed in January 2004 after almost 50 years of synoptic observations. The closure was necessitated by budgetary restrictions within the Chilean Navy. Chile now has two stations in the RBSN, 89056 Frei and 89059 O'Higgins, and one station as part of the RBCN, namely 89056 Frei.

2.3.8 The session noted that two additional UK stations are not in the ABSN, namely Brunt AWS (89020) and Chasm AWS (89021). Brunt AWS is at the planned site of the new Halley station, with Chasm at an alternative site should the expected calving event proved to be greater than currently envisaged. As the sites are relatively close together, only one will transmit in real time. The session was also advised that an AWS transmitting via ARGOS was to be installed at Fossil Bluff and that CLIMAT messages would be compiled from the data.

2.3.9 The meeting was informed of four recently assigned Italian AWSs. These are Mid Point (89648), Sity Point (89646), Priestly Glacier (89659) and Concordia (89625). These four new stations complement the three current stations of Mario Zucchelli Base (89662), Cape Ross (89666) and Cape Phillips (89661). The four new AWSs produce SYNOP reports every six hours, while Concordia additionally produces TEMP reports every 12 hours during summer. The meeting welcomed the Italian contribution to expand their observational network in the Antarctic through activating CONCORDIA station. The meeting agreed that an invitation to Italy should be made, requesting the formal inclusion of CONCORDIA (89625) into the ABCN and GUAN network.

2.3.10 The session urged Members to try and improve the implementation of the ABSN, with the objective of achieving an 80% or higher distribution of data on the GTS by the start of the IPY.

2.3.11 The session encouraged Members to produce CLIMAT and CLIMAT TEMP message as appropriate from all stations in the GSN and GUAN, and where possible from those in the ABCN, and to distribute them on the GTS.

2.3.12 The meeting received the list of stations comprising the ABSN and made changes to it. It also considered a proposed list of ABCN and recommended some changes to the matrix and the addition of one station. The amended list is given in Annex VI.

2.3.13 The meeting noted that some stations appearing on the GTS were not listed in Vol. A. (WMO – No. 9). It asked the secretariat to approach Members and national operators inviting to follow the established WMO procedures for data generation and exchange.

2.4 **Review of the distribution of processed information required at Antarctic stations**

2.4.1 The WMO Secretariat advised that the current statement on the Data-Processing Activities and Meteorological Services in the Antarctic, as contained in the *Manual on the Global Data-Processing and Forecasting System, Volume II, Regional Aspects, The Antarctic*, (WMO-No. 485), has recently been updated via Supplement No. 2 (VIII.2003). The meeting reviewed the information contained in the Annex VII, made a few minor changes, and added a note on the availability of the Antarctic Weather Forecasting Handbook (AWFH) and the Antarctic Flight Information Manual. It recommended that the EC-WG AM should thoroughly review the text at its next meeting, aiming to make it simpler whilst maintaining the requirement for forecast centres, particularly in support of users. Taking into account an active participation of a number of NMSs of RA III in the Antarctic activities, it also recommended publishing the AWFH in Spanish.

2.4.2 The representative from Australia advised of the formal decommissioning of the HF station VLM Casey during 2005. The closure was due to the equipment being expensive to maintain and to there being limited demand for this service. It is noted that the use of the Internet more than offsets the closure of VLM.

2.4.3 The representative from the UK informed the meeting that a satisfactory supply of observational data and processed information is available at Halley and Rothera through the use of the VSAT Internet link.

2.4.4 The meeting noted that processed data is normally produced at the Italian National Weather Centre (CNMCA) of the National Meteorological Authority and made available at Mario Zucchelli Base via the Internet. In some cases specific analyses and forecasts can be prepared locally for traverses, navigation and expeditions. Processed products are based mainly on ECMWF products. Recently, the hydrostatic limited area model operated at the Italian NMS has been adapted for the Antarctic and is undergoing test. Similar adaptation of the non-hydrostatic Local Model is planned for 2006.

2.4.5 The representatives made specific presentations on their Antarctic operations and plans for IPY. These are available as supporting documents on the meeting web page at http://www.wmo.int/web/www/OSY/Meetings/AntMet-IPY_StPetersburg2005/DocPlan.html. The meeting also received a briefing note from the PR of Ukraine with WMO on the operation of Vernadsky station.

2.4.6 The meeting noted that more advanced satellite data were becoming available and encouraged Members to consider installation of suitable X-band receivers in the Antarctic, particularly in time to support IPY research programmes.

2.4.7 The meeting was informed that climate modellers saw a need for better measurements of the air-sea fluxes. To meet this requirement the meeting recommended that Members should be invited to include such measurements in the observational programme of appropriate research ships.

3 REVIEW OF PLANNING AND COORDINATION OF ACTIVITIES RELATED TO THE INTERNATIONAL POLAR YEAR 2007 - 2008 (IPY) IN THE ANTARCTIC

3.1 The WMO Secretariat presented a comprehensive overview on the IPY activities. The meeting noted that the Fourteenth World Meteorological Congress (May 2003) had approved Resolution 34 (Cg-XIV) - Holding an International Polar Year in 2007-2008 and stressed that the conduct of the IPY must combine the interests of all WMO Programmes studying present and future environmental changes in Polar Regions and take into account the WMO Arctic and Antarctic activities. The idea of holding an International Polar Year in 2007-2008 was also considered by the International Council of Science (ICSU). Close collaboration had soon been developed between WMO and ICSU. In November 2004, an ICSU/WMO Joint Committee (JC) for IPY was established. The main role of JC is to facilitate projects and activities within IPY that are consistent with the six themes and observational initiatives outlined in "A Framework for the International Polar Year 2007-2008".

3.2 The meeting was informed that in order to collect the information on IPY projects planned by nations, WMO and ICSU had issued, in November 2004, a call to all nations to provide the JC with Expressions of Intent (EOI) by 14th January 2005. About 1000 EOI were collected by the JC, over 50 EOIs were identified by JC at its first session (Paris, 7-9 March 2005) as possible "Cluster projects". The JC proposed that other EOIs could be clustered around them to form full project proposals. All EOI proponents received a response from the JC, indicating the category of EOI and requesting them to develop full proposals by 30 June, 15 September 2005 and 31 January 2006. The JC at its second session (Geneva, 15-17 November 2005) completed evaluation of all full project proposals received up to 30 September 2005. The meeting noted that of these 201 proposals JC had endorsed 139 as a prominent and valued part of the IPY program. They include 114 scientific proposals (half of them related to studies of atmosphere, climate, ocean and ice), one for integrated data management services, and 24 for education and outreach. Several IPY

projects endorsed by JC will be focused on studies of Antarctic atmosphere, ocean and cryosphere.

3.3 The meeting noted that participating countries have been already involved in the IPY planning process. Australia provided six Expressions of Intent for the IPY. In addition the Australian Bureau of Meteorology is also exploring ways that it might contribute to IPY through a Southern Hemisphere THORPEX programme in collaboration with the proposed US THORPEX EOI. The Chilean National Weather Service (NWS) is planning to continue providing standard information with regard to the weather observations, which are carried out hourly during the day and at least every three during the night. However, while any airplane is flying toward or near the airport Teniente Marsh, observations will be carried out hourly even during the night. It is also planned to continue the current system of weather forecasts and, if necessary to implement special weather forecasts for research parties in the Peninsula area and/or in the interior. In addition, the NWS is planning to provide Antarctic weather information to all parties that will operate from Punta Arenas. It is also planned to have a web page through www.meteochile.cl with all the information available for the Peninsula area during the IPY.

3.4 The meeting was informed that many of the UK research programmes that are currently underway (http://www.antarctica.ac.uk/BAS_Science/programmes2005-2010/index.html) will be adjusted to take account of IPY programmes. The meeting was also advised that a review of British Antarctic Survey (BAS) plans for the IPY is available at <http://www.sciencepoles.org/index.php?s=2&rs=home&uid=563&lq=en>. In addition, BAS plans to continue conversion of some historical meteorological observations that are not presently available in electronic formats.

3.5 The meeting was briefed on the Expression of Intent that has been prepared as a joint effort by the National Antarctic Programme and NMS of Italy. This activity has the title Operational High Resolution Modelling and Multi Modelling in Support of Meteorological, Climatological and General Research in Polar Regions. Since the main targets of the planned activity are closed to the full proposal ID 180 (AC)² this EOI can be considered as clustered to ID 180 (AC)² following the verification done with the lead contact of ID 180 and his acceptance of the Italian EOI.

3.6 The meeting noted with appreciation the offer of Argentina to provide Marambio station facilities (personnel, telecommunications) to increase upper-air soundings as a part of its contribution to the IPY. It noted that for the implementation of that expanded observational programme, an agreement should be negotiated between the NMS of Argentina and interested countries to provide additional essential consumables (radiosondes and balloons) to the Marambio station. The meeting was informed that the NMS of Argentina in cooperation with the Argentina Space Agency, Comisión Nacional de Actividades Espaciales (CONAE) is planning to install a new HRPT satellite receiving station at Marambio station. In cooperation with Finnish Meteorological Institute it is also planned to continue at Marambio station the ozone soundings and other environmental observations.

3.7 On-going and planned research activities by the Russian Federation in connection with IPY were presented to the meeting. The Russian Federation has prepared 30 Expressions of Intent for the IPY related to the Antarctic studies. These EOIs were included in the 11 Antarctic IPY clusters and in the 19 bi-polar IPY clusters. 27 Russian research institutes of Roshydromet, Russian Academy of Science, Ministry of Natural Resources, Ministry of Education and Science and some other ministries intend to participate in the Antarctic studies during IPY. The Russian National Program of participation in the IPY includes meteorological, oceanographic, glaciological, biological, geological and solar activity studies at the Antarctic stations, seasonal field bases and on three research vessels in the Southern Ocean. The main aim of the studies is to obtain a snapshot of large-scale Antarctic processes impacting the global climate and to collect new data on the Antarctic environment for the determination of past, current and future changes. Most actively Russian Federation will participate in the following clusters: Climate of Antarctica and the Southern

Ocean, Synoptic Antarctic shelf-slope interactions study, Antarctic permafrost and soils, Impact of climate induced glacial melting on marine coastal communities off the Western Antarctic peninsula, Solar drivers of atmospheric change, Ozone layer and UV radiation in a changing climate evaluated during IPY.

3.8 The meeting noted with appreciation that several Members planned to install new AWSs for IPY, and had a need for information on which sensors and systems operated best under Antarctic conditions. In particular it noted the plans of Russian Federation to deploy AWSs at three Russian Antarctic stations Molodezhnaya, Leningradskaya and Russkaya that were temporarily closed in the 1980s – 1990s. Taking into account that the above information on AWSs was required soon, the meeting requested the Chairman and the WMO Secretariat to compile the appropriate information from members of the EC-WG AM and the CBS.

3.9 The meeting also noted that there was a shortfall between expectation and operation of the ABSN/ABCN. There were also apparent gaps in the observational programmes. The meeting concluded that there was a need for the scientific guidance on where improvements to the network should be made. Such guidance could form a component of an IPY project, perhaps under THORPEX.

3.10 Summarizing all the above information related to IPY preparation, the meeting came to the conclusion that there was a clear need to have comprehensive databases of standard synoptic and other meteorological observations such as radiation, turbidity, ozone, etc. that could be established during the IPY period. The representative of the Russian Federation presented an outline of full project proposal for IPY with a goal of creating a definitive, high quality data set of standard and complementary meteorological observations for the Antarctic during IPY for use in climate research and applied investigations (the short title is COMPASS). The meeting suggested that this could form an IPY project, particularly if combined with new targeted observations and special observation periods when the full ABSN/ABCN programme should be carried out. The meeting recommended that it would be appropriate to extend databases begun under the FROST and READER projects and invited offers to host databases for other parameters, including HRPT data synoptic analyses.

3.11 The meeting therefore decided that a draft of full project proposals should be developed at AARI by 20 December 2005 and sent to participants for comments with a deadline of 7 January 2006. A revised version should then be distributed to all members of EC WGAM for their comments and submitted to IPY JC by 31 January 2006. It was suggested that a meeting of potential participants in the project could be organized during the Second SCAR Open Conference (Hobart, Australia, 12-14 July 2006).

3.12 The meeting considered that the printed AWFH would probably need revision following the IPY. The online version could be revised and added to at any time, and contributions should be sent to the Australian and UK representatives in Word format.

3.13 The meeting agreed that it would be highly desirable to establish focal points on IPY in the WMO regions concerned to initiate and coordinate Antarctic activities during the IPY. Activities by such focal points could include translating the AWFH into the other official WMO languages.

4. CLOSURE OF THE SESSION

There being no further business to come before the meeting, the chairman closed the session at 1.00 p.m. on Wednesday 23 November 2005.

LIST OF PARTICIPANTS

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AGENDA

1. ORGANIZATION OF THE MEETING

- 1.1. Opening of the meeting
- 1.2. Election of chairman
- 1.3. Adoption of the agenda
- 1.4. Working arrangements

2. OPERATION OF THE EXCHANGE OF OBSERVATIONAL DATA AND PROCESSED INFORMATION CONCERNING THE ANTARCTIC

- 2.1 Status of implementation of the collection and distribution of observational data and processed information
- 2.2 Review of the monitoring on the exchange of Antarctic data
- 2.3 Status of implementation of the ABSN and the ABCN
- 2.4 Review of the distribution of processed information required at Antarctic stations

3. REVIEW OF PLANNING AND COORDINATION OF ACTIVITIES RELATED TO THE INTERNATIONAL POLAR YEAR 2007 - 2008 (IPY)

4. CLOSURE OF THE MEETING

WORK PLAN**Coordination Meeting on Antarctic Meteorology and Related IPY Activities
St. -Petersburg, Russian Federation, 21 – 23 November 2005**

	Monday 21 Nov	Tuesday 22 Nov	Wednesday 23 Nov
09h00 – 09h30	Registration	Item 2 (cont'd)	Drafting groups and
09h30 – 10h30	Items 1		draft review
10h30 – 10h45	Coffee Break	Coffee Break	Coffee Break
10h45 – 12h30	Item 2	Item 2 (cont'd)	Approve Draft of Final Report
12h30 – 13h30	Lunch	Lunch	Item 4
13h30 – 15h30	Item 2 (cont'd)	Item 3	
15h30 – 15h45	Coffee Break	Coffee Break	
15h45 – 17h30	Item 2 (cont'd)	Item 3 (cont'd)	

COORD-ANT-IPY, FINAL REPORT, ANNEX IV

ANNEX IV

Compilation of the information available in the Secretariat related to the collection of data from stations included in the Antarctic Basic Synoptic Network

Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
88963	BASE ESPERANZA	X	X	X	X	HF-SSB	Marambio	Buenos-Aires (SABM)	SMAA01 SAWB	Y	57	52	ARGENTINA
88968	BASE ORCADAS	X	X	X	X	HF-SSB	Marambio	Buenos-Aires (SABM)	SMAA01 SAWB	Y	56	51	ARGENTINA
89002	NEUMAYER	X	X+	X	X	DCP	Darmstadt	Offenbach (EUMS)	SMAA01 EDZW	Y	60	60	GERMANY
89004	S.A.N.A.E. AWS	X	X	X	X	VSAT	Pretoria	Pretoria (FAPR)	SMAA01 FASE	N	55	51	SOUTH AFRICA
89009	AMUNDSEN-SCOTT	X	X	X	X	HF radio/HF modem Email	McMurdo (NZCM)	Wellington (NZKL)	SMAA80 AMMC	Y	57	55	THE U.S.A.
89009									SMAA01 NZCM	Y			
89009									SMAA01 NZSP	Y			
89014	NORDENSKIOLD BASE	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMFI40 EFKL	Y	0	0	FINLAND
89022	HALLEY	X	X	X	X	VSAT	Exeter	Exeter (EGRR)	SMAA01 EGRR	Y	56	46	THE UNITED KINGDOM
89034	BASE BELGRANO II	X	.	X	X	HF-SSB	Marambio	Buenos-Aires (SABM)	SMAA01 SAWB	Y	50	41	ARGENTINA
89050	BELLINGSHAUSEN	X	X	X	X	Inmarsat	St Petersburg	Moscow (RUMS)	SMAA10 RUML	Y	60	60	THE RUSSIAN FEDERATION
89053	BASE JUBANY	X	X	X	X	HF-SSB	Marambio	Buenos-Aires (SABM)	SMAA01 SAWB	Y	57	55	ARGENTINA
89054	DINAMET-URUGUAY	X	X	X	X	HF-USB Voice	Frei (SCEF)	Buenos-Aires (SABM)	SMDL01 EDZW	Y	60	60	URUGUAY

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89054	SMAA01 SCEF								Y				
89054	SMAA02 SCEF								N				
89055	BASE MARAMBIO (CENTRO MET. ANTARTICO)	X	X	X	X	Not applicable	Marambio	Buenos-Aires (SABM)	SMAA01 SAWB	Y	58	56	ARGENTINA
89056	CENTRO MET. ANTARTICO PDTE. EDUARDO FREI	X	X	X	X	Not applicable	Frei (SCEF)	Buenos-Aires (SABM)	SMDL01 EDZW	Y	60	60	CHILE
89056									SMAA01 SCEF	Y			
89056									SMAA02 SCEF	N			
89058	GREAT WALL	X	X	X	X	HF-LSB TTY 50 bauds	Frei (SCEF)	Buenos-Aires (SABM)	SMDL01 EDZW	Y	60	59	CHINA
89058									SMAA01 SCEF	Y			
89058									SMAA02 SCEF	N			
89059	BASE BERNARDO O'HIGGINS	X	X	X	X	HF-SSB Voice	Frei (SCEF)	Buenos-Aires (SABM)	SMDL01 EDZW	Y	60	60	CHILE
89059									SMAA01 SCEF	Y			
89059									SMAA02 SCEF	N			
89061	PALMER STATION	VSAT	NOAAPort	Washington (KPAL)	SMAA41 KPAL	N	59	59	THE U.S.A.

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89061								SMDL01 EDZW	Y				
89061								SMAA01 SABM	N				
89062	ROTHERA	X	X	X	X	VSAT	Rothera	Exeter (EGRR)	N	58	59	THE UNITED KINGDOM	
89062								SMDL01 EDZW	Y				
89062								SMAA01 SABM	N				
89062								SMAA01 SAWB	Y				
89063	VERNADSKY	X	X	X	X	HF Voice	Rothera	Exeter (EGRR)	Y	46	46	UKRAINE	
89063								SMAA01 EGRR	N				
89063								SMAA01 SABM	N				
89063								SMAA01 SAWB	Y				
89064	JUAN CARLOS I AWS	DCP	Darmstadt	Offenbach (EUMS)		42		SPAIN	
89066	BASE SAN MARTIN	X	.	X	X	HF-SSB	Marambio	Buenos-Aires (SABM)	Y	52	43	ARGENTINA	
89108	UNIV. WI ID 8985 (HENRY)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	N	51	51	THE U.S.A. (UNIVERSITY OF WISCONSIN)	

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89208	UNIV. WI ID 8987 (CLEAN AIR)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)			0		THE U.S.A. (UNIVERSITY OF WISCONSIN)
89251	KING SEJONG	X	X	X	X	HF Voice	Frei (SCEF)	Buenos-Aires (SABM)	SMDL01 EDZW	Y	60	60	THE REPUBLIC OF KOREA
89251									SMAA01 SCEF	Y			
89251									SMAA02 SCEF	N			
89257	UNIV. WI ID 8925 (LIMBERT AWS)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	56	3	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89262	UNIV. WI ID 8926 (LARSEN ICE SHELF)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)			45		THE U.S.A. (UNIVERSITY OF WISCONSIN)
89266	UNIV. WI ID 8902 (BUTLER ISLAND)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	46	46	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89272	UNIV. WI ID 8917 (SKI-HI)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	50	50	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89314	UNIV. WI ID 21358 (THERESA)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	50	50	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89324	UNIV. WI ID 8903 (BYRD STATION)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)			0		THE U.S.A. (UNIVERSITY OF WISCONSIN)
89327	UNIV. WI ID 8981 (MOUNT SIPLE)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)			42		THE U.S.A. (UNIVERSITY OF WISCONSIN)

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89332	UNIV. WI ID 21361 (ELIZABETH)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	50	47	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89345	UNIV. WI ID 8900 (SIPLE DOME)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	52	2	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89376	UNIV. WI ID 8911 (GILL)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	51	51	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89377	UNIV. WI ID 8908 (LETTAU)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	49	49	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89512	NOVOLAZAREVSKAJA	X	X	X	X	Inmarsat	St Petersburg	Moscow (RUMS)	SMAA10 RUML	Y	60	59	THE RUSSIAN FEDERATION
89514	MAITRI	X	X	X	X	HF/TTY-TELEX	New Delhi	New Delhi (DEMS)	SMAA10 DEMS	N	50	51	INDIA
89532	SYOWA	X	X	X	X	DCP	Darmstadt	Offenbach (EUMS)	SMAA80 AMMC	Y	56	51	JAPAN
89532									SMAA01 EUMS	Y			
89564	MAWSON	X	X	X	X	Satellite circuit	Hobart	Melbourne (AMMC)	SMAA01 AMMC	Y	60	60	AUSTRALIA
89564									SMAA80 AMMC	Y			
89568	DAVIS LGB 35 AWS	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	53	53	AUSTRALIA
89571	DAVIS	X	X	X	X	Not applicable	Davis	Melbourne (AMMC)	SMAA01 AMMC	Y	60	60	AUSTRALIA
89571									SMAA80 AMMC	Y			

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89571								SMNV01 NVVV	Y				
89573	ZHONGSHAN	X	X	X	X	UHF/voice	Davis	Melbourne (AMMC)	SMAA01 AMMC	Y	60	55	CHINA
89573								SMAA80 AMMC	Y				
89573								SMNV01 NVVV	Y				
89574	PROGRESS	X	X	X	X	Inmarsat	St Petersburg	Moscow (RUMS)	SMAA10 RUML	Y	60	59	RUSSIAN FEDERATION
89576	DAVIS (LGB 69)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	48	48	AUSTRALIA
89592	MIRNYJ	X	X	X	X	Inmarsat	St Petersburg	Moscow (RUMS)	SMAA80 AMMC	Y	60	59	THE RUSSIAN FEDERATION
89592								SMAA10 RUML	Y				
89606	VOSTOK	X	X	X	X	Inmarsat	St Petersburg	Moscow (RUMS)	SMAA80 AMMC	Y	60	51	THE RUSSIAN FEDERATION
89606								SMAA10 RUML	Y				
89610	CASEY (CAPE POINSETT)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	45	45	AUSTRALIA
89611	CASEY	X	X	X	X	Satellite circuit	Hobart	Melbourne (AMMC)	SMAA01 AMMC	Y	60	60	AUSTRALIA
89611								SMAA80 AMMC	Y				

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89611								SMNV01 NVVV	Y				
89612	CASEY AIRSTRIP AWS 2	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	44	43	AUSTRALIA
89614	CASEY (UPPER PETERSON RUNWAY)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	48	48	AUSTRALIA
89642	DUMONT D'URVILLE	X	X	X	X*	Inmarsat	Toulouse	Toulouse (LFPW)	SMAA80 AMMC	Y	58	58	FRANCE
89642								SMAA01 LFPW	Y				
89662	BASE BAIA TERRA NOVA	X	X	X	X	Inmarsat	Rome	Rome (LIIB)			0		ITALY
89664	MCMURDO	X	X	X	X	Not applicable	McMurdo (NZCM)	Wellington (NZKL)	SMAA01 NZCM	Y	60	60	THE U.S.A.
89667	UNIV. WI ID 8927 (PEGASUS NORTH)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)			0		THE U.S.A. (UNIVERSITY OF WISCONSIN)
89744	UNIV. WI ID 8918 (RELAY STAT)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	47	46	THE U.S.A. (UNIVERSITY OF WISCONSIN)
89757	MAWSON (LGB 20 AWS)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA80 AMMC	Y	0	0	AUSTRALIA
89758	MAWSON (LGB10 AWS)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFPW	N	39	37	AUSTRALIA
89762	MAWSON (LGB 00 GE 03 AWS)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA80 AMMC	Y	42	0	AUSTRALIA

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89767	AMERY	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFWW	N	60	60	AUSTRALIA
89774	DAVIS (LGB 59 AWS)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)			0		AUSTRALIA
89799	UNIV. WI ID 8924 (NICO)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	51	49	THE U.S.A. (UNIVERSITY OF WISCONSIN) AUSTRALIA
89803	CASEY (TRAVERSE GF08)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)			50		AUSTRALIA
89811	CASEY (LAW DOME SUMMIT)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA17 LFWW	N	50	50	AUSTRALIA
89812	AO28 AWS, SOUTH OF LAW DOME	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)			35		AUSTRALIA
89813	CASEY (TRAVERSE GC41)	X	X	X	X	ARGOS	Toulouse	Toulouse (LFPW)	SMAA80 AMMC	Y	44	44	AUSTRALIA
89813									SMAA17 LFWW	N			
89828	UNIV. WI ID 8989 (DOME C II)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	51	49	THE U.S.A. (UNIVERSITY OF WISCONSIN) THE U.S.A. (UNIVERSITY OF WISCONSIN)
89834	UNIV. WI ID 8916 (D-47)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	46	46	THE U.S.A. (UNIVERSITY OF WISCONSIN) THE U.S.A. (UNIVERSITY OF WISCONSIN)
89864	UNIV. WI ID 8905 (MANUELA)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	51	50	THE U.S.A. (UNIVERSITY OF WISCONSIN) THE U.S.A. (UNIVERSITY OF WISCONSIN)
89866	UNIV. WI ID 8906 (MARBLE POINT)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	52	51	THE U.S.A. (UNIVERSITY OF WISCONSIN) THE U.S.A. (UNIVERSITY OF WISCONSIN)
89868	UNIV. WI ID 8913 (SCHWERDTFEGER)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)	SMAA14 KARS	N	49	47	THE U.S.A. (UNIVERSITY OF WISCONSIN) THE U.S.A. (UNIVERSITY OF WISCONSIN)

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Station Index	Name	Programme of observation				Means used to transmit data to the collecting centre	Collecting centre	RTH	Abbreviated heading	In Volume C1	Number of SYNOP reports received in January 2005		Station operated by
		00	06	12	18						SAM	SMM	
89869	UNIV. WI ID 8931 (MARILYN)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)		0		THE U.S.A. (UNIVERSITY OF WISCONSIN)	
89873	UNIV. WI ID 8915 (ELAINE)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)		0		THE U.S.A. (UNIVERSITY OF WISCONSIN)	
89879	UNIV. WI ID 8984 (POSSESSION IS.)	X	X	X	X	ARGOS	Wallops	Washington (KWBC)		49		THE U.S.A. (UNIVERSITY OF WISCONSIN)	

Draft amendments to the Manual on the GTS - Volume II - The Antarctic

To replace the pages B.ANT-3 to B.ANT-5 by the following pages:

ANTARCTIC DATA TELECOMMUNICATION ARRANGEMENTS**1. GENERAL**

1.1.1 The telecommunication network within the Antarctic and the interconnecting links between the Antarctic and the GTS should ensure the rapid and reliable collection, exchange and further distribution of Antarctic meteorological data to satisfy the needs of Members of WMO.

1.1.2 Meteorological services at many Antarctic stations are run by National Antarctic Programmes and not by the Meteorological Authority of the operating country.

2. DATA TO BE TRANSMITTED

The data transmitted from the Antarctic should be composed of:

- (a) Surface synoptic reports for main and intermediate standard hours (0000, 0300, 0600, 0900, 1200, 1500, 1800 and 2100 UTC), radiosonde data for 0000 and 1200 UTC (and if available for other hours) from all stations in the Antarctic Basic Synoptic Network (ABSN) and also reports from additional stations as available;
- (b) All reports from ships, aircraft and buoys;
- (c) CLIMAT and CLIMAT TEMP reports;
- (d) Priority reports, such as warnings of dangerous weather phenomena;
- (e) Other types of information as agreed.

3. COLLECTION AND DISTRIBUTION OF DATA

3.1 The responsibility of collecting centres for the collection of observational data from Antarctic stations is as follows:

Collecting Centre	Station index numbers
Davis	89571, 89573
Frei	89054, 89056, 89058, 89059, 89251
Hobart	89564, 89611
Marambio	88963, 88968, 89034, 89053, 89055, 89066
McMurdo	89009, 89664
St Petersburg (Note)	89050, 89512, 89574, 89592, 89606
New Delhi	89514
Darmstadt (EUMETSAT)	89002, 89064, 89532
Pretoria	89004
Rome	89625, 89646, 89648, 89659, 89661, 89662, 89666
Exeter	89022, 89062
Toulouse	89642
Toulouse (ARGOS)	89014, 89020, 89065, 89568, 89576, 89586, 89610, 89612, 89614, 89616, 89620, 89757, 89758, 89762, 89767, 89774,

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	89803, 89807, 89811, 89812, 89813, 89815
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Landover (ARGOS)	89108, 89208, 89257, 89262, 89266, 89272, 89314, 89324, 89327, 89332, 89345, 89376, 89377, 89667, 89744, 89799, 89828, 89834, 89864, 89866, 89868, 89869, 89873, 89879
Note: Novalazarevskaya is a back-up collecting centre	

3.2 The principal routes by which Antarctic meteorological data enter the GTS are given in Figure 1.

3.3 The Antarctic Meteorological Centres at Frei and Marambio operate HF broadcasts including forecasts and other products. Details of the transmission programmes are included in the WMO Publication No. 9 – Volume C2.

4. SPECIFIC ARRANGEMENTS FOR THE EXCHANGE OF OBSERVATIONAL DATA

4.1 As regards ship's reports, Antarctic collecting stations should make every effort to collect reports from ships which do not otherwise transmit to GTS centres outside Antarctica.

4.2 Data from buoys and AWS in the Antarctic are normally collected by ARGOS and disseminated by reception centres located in Toulouse (France) and Landover (USA).

5. MONITORING THE OPERATION OF THE GTS

In addition to participating in the annual specific monitoring on the exchange of Antarctic data, Members may carry out their own monitoring. When shortcomings are identified, the results of such a survey should be communicated to the relevant GTS centres, including the Antarctic collecting stations, and to the WMO Secretariat, to take appropriate action.

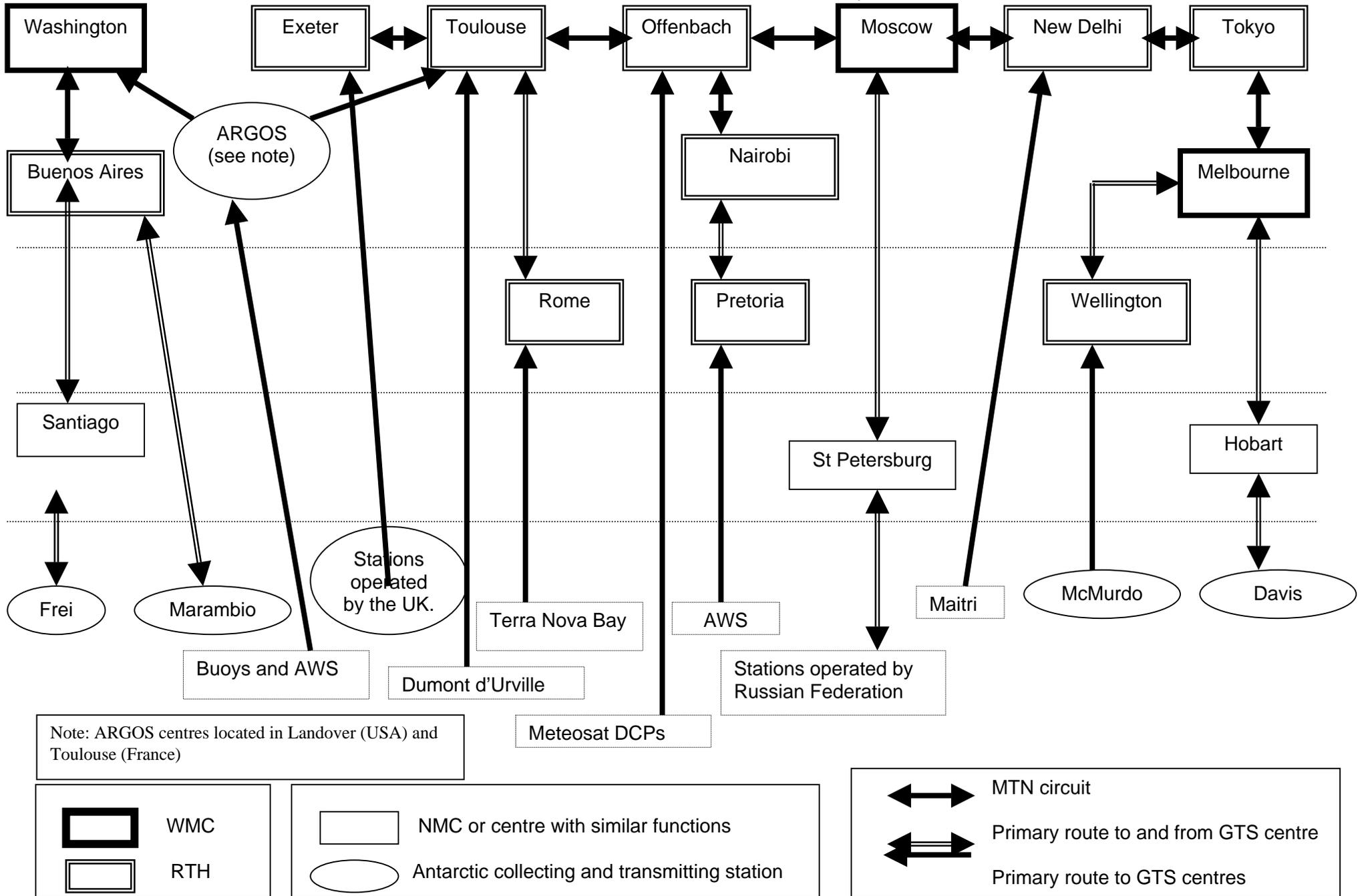


Figure 1 – The principal routes by which Antarctic meteorological data enter the GTS

LIST OF STATIONS COMPRISING THE ANTARCTIC BASIC SYNOPTIC NETWORK (2004)**STATIONS OPERATED BY ARGENTINA**

	ABSN
88963 BASE ESPERANZA	S
88968 BASE ORCADAS	S
89034 BASE BELGRANO II	S
89053 BASE JUBANY	S
89055 BASE MARAMBIO (CENTRO MET. ANTARTICO)	S / W R
89066 BASE SAN MARTIN	S

STATIONS OPERATED BY AUSTRALIA

89564 MAWSON	S / W R
89568 LAMBERT GLACIER BASIN, LGB 35 AWS	S
89571 DAVIS	S / W R
89576 LGB 69 AWS	S
89610 CASEY (POINSETT)	S
89611 CASEY	S / W R
89612 CASEY AIRSTRIP AWS 2	S
89614 CASEY (PETERSON)	S
89757 MAWSON (LGB 20 AWS)	S
89758 MAWSON (LGB 10 AWS)	S
89762 MAWSON (LGB 00 GE 03 AWS)	S
89767 AMERY ICE SHELF AWS	S
89774 DAVIS (LGB 59 AWS)	S
89803 WILKES LAND, GF 08 AWS	S
89811 LAW DOME SUMMIT AWS	S
89812 AO28 AWS, SOUTH OF LAW DOME	S
89813 WILKES LAND, GC 41 AWS	S
89616 DSS-A LAW DOME SUMMIT SOUTH	S
89586 Mt. BROWN-A	S
89620 EAST LAW DOME	S
89807 SNYDER ROCKS	S
89815 HAUPT NUNATAKS	S

STATIONS OPERATED BY CHILE

89056 CENTRO MET.ANTARTICO "PDTE.EDUARDO FREI"	S
89059 BASE BERNARDO O'HIGGINS	S

STATIONS OPERATED BY CHINA

89058 GREAT WALL	S
89573 ZHONGSHAN	S

STATIONS OPERATED BY FINLAND

89014 NORDENSKIOLD BASE	S
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STATIONS OPERATED BY FRANCE

89642 DUMONT D'URVILLE	S / W R
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STATIONS OPERATED BY GERMANY

89002 NEUMAYER	S / W R
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STATIONS OPERATED BY INDIA

89514 MAITRI	S
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STATIONS OPERATED BY ITALY

89662	BASE BAIA TERRA NOVA	S/WR
89625	CONCORDIA	S/WR
89648	MID POINT	S
89646	SITRY POINT	S
89659	PRIESTLY GLACIER	S
89666	CAPE ROSS	S
89661	CAPE PHILLIPS	S

STATIONS OPERATED BY JAPAN

89532	SYOWA	S / W R
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STATIONS OPERATED BY THE REPUBLIC OF KOREA

89251	KING SEJONG	S
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STATIONS OPERATED BY THE RUSSIAN FEDERATION

89050	BELLINGSHAUSEN	S
89512	NOVOLAZAREVSKAJA	S / W R
89574	PROGRESS	S
89592	MIRNYJ	S / W R
89606	VOSTOK	S

STATIONS OPERATED BY SOUTH AFRICA

89004	S.A.N.A.E. AWS	S
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STATIONS OPERATED BY SPAIN

89064	JUAN CARLOS 1 AWS	S
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STATIONS OPERATED BY UKRAINE

89063	VERNADSKY	S
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STATIONS OPERATED BY THE UNITED KINGDOM

89022	HALLEY	S / W R
89062	ROTHERA	S / W R
89065	FOSSIL BLUF	S

STATIONS OPERATED BY URUGUAY

89054	DINAMET-URUGUAY	S
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STATIONS OPERATED BY THE USA

89009	AMUNDSEN-SCOTT	S / W R
89061	PALMER STATION	S
89664	MCMURDO	S / W R

STATIONS OPERATED BY THE USA (UNIVERSITY OF WISCONSIN)

89108	UNIV. WI ID 8985 (HENRY)	S
89208	UNIV. WI ID 8987 (CLEAN AIR)	S
89257	UNIV. WI ID 8925 (LIMBERT)	S
89262	UNIV. WI ID 8926 (LARSEN ICE SHELF)	S
89266	UNIV. WI ID 8902 (BUTLER ISLAND)	S
89272	UNIV. WI ID 8917 (SKY-BLU)	S
89314	UNIV. WI ID 21358 (THERESA)	S
89324	UNIV. WI ID 8903 (BYRD STATION)	S
89327	UNIV. WI ID 8981 (MOUNT SIPLE)	S
89332	UNIV. WI ID 21361 (ELIZABETH)	S
89345	UNIV. WI ID 8900 (SIPLE DOME)	S
89376	UNIV. WI ID 8911 (GILL)	S

89377	UNIV. WI ID 8908 (LETTAU)	S
89667	UNIV. WI ID 8927 (PEGASUS NORTH)	S
89744	UNIV. WI ID 8918 (RELAY STAT)	S
89799	UNIV. WI ID 8924 (NICO)	S
89828	UNIV. WI ID 8989 (DOME C II)	S
89834	UNIV. WI ID 8916 (D-47)	S
89864	UNIV. WI ID 8905 (MANUELA)	S
89866	UNIV. WI ID 8906 (MARBLE POINT)	S
89868	UNIV. WI ID 8913 (SCHWERDTFEGER)	S
89869	UNIV. WI ID 8931 (MARILYN)	S
89873	UNIV. WI ID 8915 (ELAINE)	S
89879	UNIV. WI ID 8984 (POSSESSION IS.)	S

LIST OF STATIONS COMPRISING THE ANTARCTIC BASIC CLIMATOLOGICAL NETWORK
(2004)

INDEX	STATION NAME	CLIMAT	CLIMAT TEMP	GSN	GUAN
Stations operated by Argentina					
88963	BASE ESPERANZA	X		X	
88968	BASE ORCADAS	X		X	
89034	BASE BELGRANO II	X			
89053	BASE JUBANY	X			
89055	BASE MARAMBIO (CENTRO MET. ANTARTICO)	X	X	X	X
89066	BASE SAN MARTIN	X			
Stations operated by Australia					
89564	MAWSON	X	X	X	X
89571	DAVIS	X	X	X	X
89611	CASEY	X	X	X	X
89757	MAWSON (LGB 20 AWS)	X		X	
Stations operated by Chile					
89056	CENTRO MET. ANTARTICO "PDTE. EDUARDO FREI"	X		X	
89059	BASE BERNARDO O'HIGGINS	X		X	
Stations operated by China					
89058	GREAT WALL	X			
89573	ZHONGSHAN	X		X	
Stations operated by France					
89642	DUMONT D'URVILLE	X	X	X	X
Stations operated by Germany					
89002	NEUMAYER	X	X	X	X
Stations operated by India					
89514	MAITRI	X			
Stations operated by Italy					
89662	BASE BAIA TERRA NOVA	X	X	X	
89625	CONCORDIA				
Stations operated by Japan					
89532	SYOWA	X	X	X	X
Stations operated by the Russian Federation					
89050	BELLINGSHAUSEN	X		X	
89512	NOVOLAZAREVSKAJA	X	X	X	X
89574	PROGRESS	X		X	
89592	MIRNYJ	X	X	X	X
89606	VOSTOK	X		X	
Stations operated by Ukraine					
89063	VERNADSKY	X		X	
Stations operated by the United Kingdom					
89022	HALLEY	X	X	X	X
89062	ROTHERA	X	X	X	
89065	FOSSIL BLUFF	X		X	
Stations operated by Uruguay					
89054	DINAMET-URUGUAY	X			
Stations operated by the USA					
89009	AMUNDSEN-SCOTT	X	X	X	X
89664	MCMURDO	X	X	X	X

Stations operated by the USA (University of Wisconsin)					
89262	UNIV. WI ID 8926 (LARSEN ICE SHELF)	-		X	
89266	UNIV. WI ID 8902 (BUTLER ISLAND)	-		X	
89272	UNIV. WI ID 8917 (SKY-BLU)	-		X	
89324	UNIV. WI ID 8903 (BYRD STATION)	-		X	
89327	UNIV. WI ID 8981 (MOUNT SIPLE)	-		X	
89345	UNIV. WI ID 8900 (SIPLE DOME)	-		X	
89377	UNIV. WI ID 8908 (LETTAU)	-		X	
89828	UNIV. WI ID 8989 (DOME C II)	-		X	
89879	UNIV. WI ID 8984 (POSSESSION IS.)	-		X	

Excerpts from the Manual on the Global Data-Processing and Forecasting System, Volume II, Regional Aspects, The Antarctic, (WMO-No. 485)

DATA-PROCESSING ACTIVITIES AND METEOROLOGICAL SERVICES IN THE ANTARCTIC

1. It is proposed that data-processing and meteorological service functions be carried out by the following stations in the Antarctic:
 - Casey
 - McMurdo
 - Marambio
 - Presidente Frei
 - Rothera

2. The functions proposed for stations in the Antarctic providing data-processing and other meteorological services, including services for shipping, aircraft, local operations and research, are:
 - (a) Preparation of meteorological analyses and prognoses for the whole of the Antarctic or for defined sectors thereof, and making them promptly available to other stations inside or outside the Antarctic;
 - (b) Preparation of specialized meteorological forecasts for users (marine and aviation interests, traverse parties, etc.), and making them promptly available to other stations inside or outside the Antarctic. Products that may be required should include for the relevant areas and subject to seasonal variation:
 - Surface analyses with frontal positions and present weather at 0000, 0006, 1200 and 1800 UTC;
 - Surface prognostic charts showing frontal positions and weather forecast for up to two days and longer where possible;
 - Local area forecasts in support of remote aircraft operations on request;
 - Upper-air analysis for 0000 and 1200 UTC for the standard levels (H, W, T);
 - Upper-air forecasts for the standard levels for up to two days and longer where possible (H, W, T);
 - Swell and wave (sea state) analysis for 0000 and 1200 UTC and forecasts for up to two days;
 - Sea-ice analysis at about 20 km resolution or better with prognoses for up to two days;
 - Local sea-ice analyses on request;
 - Satellite orbital data in the appropriate code form on request;
 - (c) Preparation and distribution of warnings of dangerous weather conditions for the area for which the station prepares analyses, prognoses or specialized forecasts; products that may be required should include forecasts of icing conditions and other dangerous weather for surface, ship and air operations;
 - (d) Support for research activities as required.

3. Criteria for inclusion of an Antarctic station in the list of stations proposed in paragraph 1 are:
 - (a) That the station is willing to carry out the functions indicated in paragraph 2 above to the maximum extent possible;
 - (b) That the station has, or will have in the near future, the capability of carrying out the functions adequately;
 - (c) That at least one other station inside or outside the Antarctic requires the processed information available from the station;
 - (d) That the station should have adequate telecommunication facilities to receive observational data and exchange and distribute processed information with other stations as required.

NOTE: It is recognized that the carrying out of these functions indicated in paragraph 2 above is subject to seasonal variations between the austral summer and winter. Further information is available in the Antarctic Weather Forecasting Handbook and the Antarctic Flight Information Manual.