Report from the GCOS Lead Centre for Antarctica
2012

My overall assessment of the situation for Antarctica, the sub-Antarctic and Southern Ocean stations is one of broad stability. Antarctica is now above the global average for receipt of CLIMAT reports and averages around 94%. Many of the Antarctic GCOS stations are remote AWS, and many of these are aging.

CLIMAT messages

The monitoring carried out at the British Antarctic survey showed an average of 94% of the CLIMAT message being sent on the GTS for the GSN stations in Antarctica and the sub-Antarctic island. A month by month breakdown is shown below:

January	93%
February	95%
March	95%
April	98%
May	95%
June	90%
July	90%
August	95%
September	95%
October	93%
November	93%
December	95%

This percentage has increased greatly from the value of 70% in 2009 mainly due the British Antarctic Survey, as Lead Centre, generating a provisional CLIMAT message from the available SYNOP messages for those stations that do not currently produce a CLIMAT. This is only done for those stations with greater than 95% availability of SYNOP messages.

In most cases isolated missing CLIMATs are just occasional lapses, often involving a failure in GTS insertion or forwarding, and these are sometimes made up in later months following prompting. Two operating stations that do not generate their own CLIMATs are the Italian stations Concordia (89625) and Mario Zuccelli Station (89662). There are however sometimes insufficient SYNOPs on the GTS from these stations to generate monthly mean values.

Lettau (89377, USA AWS) failed in August 2011 and was returned to the USA last Antarctic season for repair, it is hoped that it will be operational again soon.
Mount Siple (89327, USA AWS) does not have sufficient battery strength to operate through the winter. Links have been made with the South Koreans who may be able to take a replacement unit in on their ship as it passes.
Bouvetoya (68992) has not been operational since 2007 and it is not clear what the status of this AWSX is or what the plans are for the future.

We do some quality control by comparing values in the CLIMAT message with those generated from SYNOP messages. This has revealed one or two issues and these have been resolved by contacting the relevant operators.

SYNOP message

The SYNOP messages are monitored on a daily basis and E-mail alerts are sent where the data has stopped arriving on the GTS. If this happens the relevant operators are notified and the situation is then resolved.

Examples of this have been:

The synoptic observations from the Dumont d'Urville (89642) stopped on the 18th July so we contacted Meteo-France and the problem was resolved.
The synoptic observation from Concordia (89625) and Mario Zuchelli Station (89662) stopped in October and we contacted the Italians and they resolved the problem
The pressure values in the CLIMAT message sent out from Marion Island (68994) didn't seem to be correct for September so we contacted the South Africans and they resent the correct message.

TEMP messages

Following the WMO resolution to remove the requirement for CLIMAT TEMP messages, monitoring of the reception of CLIMAT TEMP bulletins ceased in 2010 July. Monitoring of the TEMP messages has continued and shows that all Antarctic stations are functioning, though there is a seasonal variation in availability. Only three of the twelve Antarctic GUAN stations (Syowa (89532), Davis (89571) and Casey (89611)) carry out a full program year round. The Russian stations (Novolazarevskaya (89512) and Mirny (89592)) augment their routine daily program with additional flights at 12 UT every third month. Eleven stations usually carry out sufficient sonde flights to generate monthly means at one of the standard hours, and several have additional seasonal flights at a second standard hour. The program of flights from Marambio (89055) has been maintained at around two per week, usually on the days when sondes are not flown at Rothera (89062).

More details information on the CLIMAT and SYNOP/TEMP monitoring can be found at:
http://www.antarctica.ac.uk/met/jds/met/AntON_CLM_2012.pdf
and
http://www.antarctica.ac.uk/met/jds/met/AntON_SYN_2012.pdf