



In Memoriam  
Dr. Charles R. Stearns  
1928-2010

# The Ebb and Flow of Antarctic Meteorological Data

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<http://amrc.ssec.wisc.edu/>

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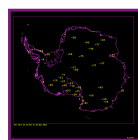
## Abstract:

Antarctic meteorological data is provided via a variety of methods and frameworks to serve a diverse community. These data sets are critical for operational use such as weather forecasting. Case studies conducted in post event review by forecasters or by students learning about Antarctic phenomena rely on these data. Of course, research activities in both the meteorological and non-meteorological disciplines (such as glaciology, biology, etc.) require meteorological information. As a result of the diverse data types, data sources and user communities, various means with differing objectives are employed to provide and distribute meteorological data.

## Sample Antarctic Meteorological Data Resources and National Data Centers:

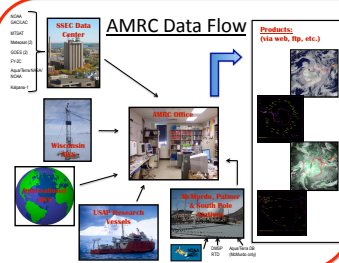
Countries Reporting An Established NADC	NADC
Argentina	Argentinian Antarctic Institute (Instituto Antártico Argentino - Dirección Nacional del Antártico)
Australia	Australian Antarctic Data Centre
China	Chinese National Antarctic Data Center (CN-NAADC) - Polar Research Institute of China (P.R.I.C.)
France	PNAC - SILEX Project
Japan	Polar Data Center (PDC) in the National Institute of Polar Research (NIPR)
Netherlands	Royal Netherlands Institute for Sea Research (IOOS)
Norway	NAADC within the Norwegian Polar Institute (NPI)
Spain	Polar National Data Center - located in the Spanish Geographical Survey
United Kingdom	National Antarctic Data Centre (the AADC) - within the Environmental and Information Division of the British Antarctic Survey
United States of America	There is no "one" dedicated data center - a variety of Government funded institutions (National Science Foundation, National Oceanic and Atmospheric Administration, NASA) and Universities provide various levels of service

- AMRC (see right)
- Antarctic Mesoscale Prediction System Archive
- Global Change Master Directory (Antarctic Master Directory)
- USAP Data Coordination Center
- National Antarctic Data Centers
- National Snow and Ice Data Center
- National Climatic Data Center
- READER



Historical Antarctic meteorology data and network issues are similar to those from 20 years ago to today:

- Distribution
- Archive
- Quality control
- Coordination



## Meteorological Data User Communities:

Researchers  
Forecasters  
Logistics planners  
Educators  
Tourist expeditions

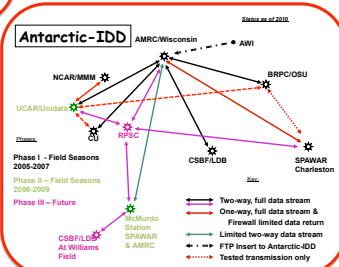
## Challenge: Data Archive Media

- o Moving target
  - o Critically needed
  - o Protecting the investment!
- o Media used to archive data since 1992 at AMRC:
  1. Magneto-optic disks
  2. 8 millimeter Exabyte tapes
  3. 4 millimeter DDS3 tapes
  4. Compact disks (CD)
  5. Digital video disks (DVD)
  6. 3590 IBM tapes
  7. LTO tapes
  8. RAID's (on-line)



## Example Data Networks, Communications Relays and Data Flow:

- Antarctic-Internet Data Distribution (IDD)/Local Data Manager (LDM)
- Global Telecommunications System (GTS)/Aeronautical Fixed Telecommunications Network (AFTN)
- High Frequency (HF) Radio Relay
- Constellation satellite relay: e.g. Iridium
- Geostationary satellite relay: e.g. Inmarsat
- Polar orbiting satellite relay: e.g. Argos



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