

# Antarctic and Southern Ocean Data Management by the Joint SCAR/COMNAP Committee on Antarctic Data Management

CODATA 20, Beijing, China, 25-10-2006

Taco de Bruin

JCADM Chief Officer

Co-chair IPY Data Subcommittee



Santiago Ramón y Cajal (Nobel Prize winner in 1906),  
“Advice to a Young Investigator” (1897):

“... a scholar’s positive contribution is measured by  
the sum of the original data that he contributes.

**Hypotheses come and go but data remain.”**



## Antarctic Treaty, Article III – 1c:

*....the Contracting Parties agree....:*

*“Scientific observations and results from Antarctica shall be exchanged and made freely available”*



## SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH (SCAR)

- Initiate, conduct and coordinate international scientific research in Antarctica
- Membership of 34 nations



## COUNCIL OF MANAGERS OF NATIONAL ANTARCTIC PROGRAMMES (COMNAP)

- Facilitate scientific research
- Emphasis on logistics and safety
- Membership of 29 nations



## The SCAR-COMNAP Joint Committee on Antarctic Data Management (JCADM) was established in 1997



- To coordinate the development of the Antarctic Data Management System



## SCAR is an inter-disciplinary committee of ICSU: Natural link between JCADM and CODATA



### Scientific Committee on Antarctic Research

Home

[Members only](#)

[About](#)

[Science & Data](#)

[News](#)

[Events](#)

[Antarctic Treaty](#)

[Antarctic Information](#)

[International Polar Year](#)

[Publications](#)

[Communication and Education](#)

[Contacts](#)

You are in: [Home](#) » [Science & Data](#)

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#### Science & Data



Standing Scientific Groups (SSG):

SSG on Geoscience (SSG-GS)

SSG on Life Sciences (SSG-LS)

SSG on Physical Sciences (SSG-PS)

Scientific Research Projects (SRP)

Data:

Data and Information Management (JCADM)

## Science & Data

- Standing Scientific Groups (SSG)
- Scientific Research Programmes (SRP)
- Data

### Standing Scientific Groups

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SCAR's Standing Scientific Groups are responsible for:

- Sharing information on disciplinary scientific research being conducted by national Antarctic programmes;
- Identifying research areas or fields where current research is lacking;
- Coordinating proposals for future research by national Antarctic programmes to achieve maximum scientific and logistic effectiveness;
- Identifying research areas or fields that might be best investigated by a SCAR Scientific Research Programme and establishing Scientific Programme Planning Groups to develop formal proposals to the Executive Committee;
- Establishing Action and Expert Groups to address specific research topics within the discipline.

The three Standing Scientific Groups are:



## **The SCAR-COMNAP Joint Committee on Antarctic Data Management (JCADM) was established in 1997**

- Members of JCADM are the managers of National Antarctic Data Centres (NADC)**
  
- To coordinate the development of the Antarctic Data Management System:**
  - ✓ Recruitment of new National Antarctic Data Centres (NADC)**
  
  - ✓ Capacity building**
  
  - ✓ Global inventory of Antarctic and Southern Ocean data set descriptions**



## Recruitment of new National Antarctic Data Centres (NADC):

**1997: 15 nations**

**2004: 26 nations**

**2006: 30 nations**





## Recruitment of new National Antarctic Data Centres (NADC):

Currently 30 nations represented in JCADM

Argentina

Germany

Poland

Australia

India

Russia

Belgium

Italy

Spain

Bulgaria

Japan

South Africa

Canada

Korea

Sweden

Chile

Malaysia

Switzerland

China

Netherlands

Ukraine

Estonia

New Zealand

United Kingdom

Finland

Norway

United States

France

Peru

Uruguay

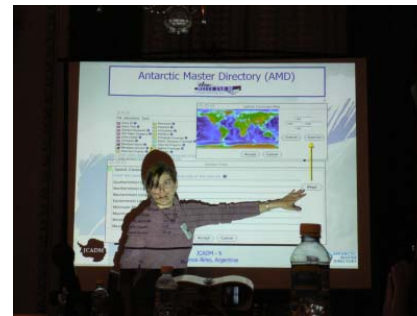


## Capacity building:

- JCADM web site ([www.jcadm.scar.org](http://www.jcadm.scar.org)):
  - guidelines on all aspects of Antarctic data management
    - *how to encourage scientists to submit metadata*
    - *data policies*
    - *promotion of data management*
    - *etc.*

## • Regional capacity building workshops in

- 1998 ( Concepcion, Chile )
- 1999 ( Bremerhaven, Germany )
- 2003 ( Brussels, Belgium )
- 2005 ( Buenos Aires, Argentina )
- 2006 ( Hobart, Australia )
- 2007 ( Rome, Italy )



- Site visits by experts and internships by trainees



## Global inventory of Antarctic and Southern Ocean data set descriptions

### Antarctic Master Directory (AMD)

- online, searchable data base of Antarctic data set descriptions
- data set descriptions are in the Directory Interchange Format (DIF)
- contains over 3950 data set descriptions and is the largest directory of Antarctic data set descriptions

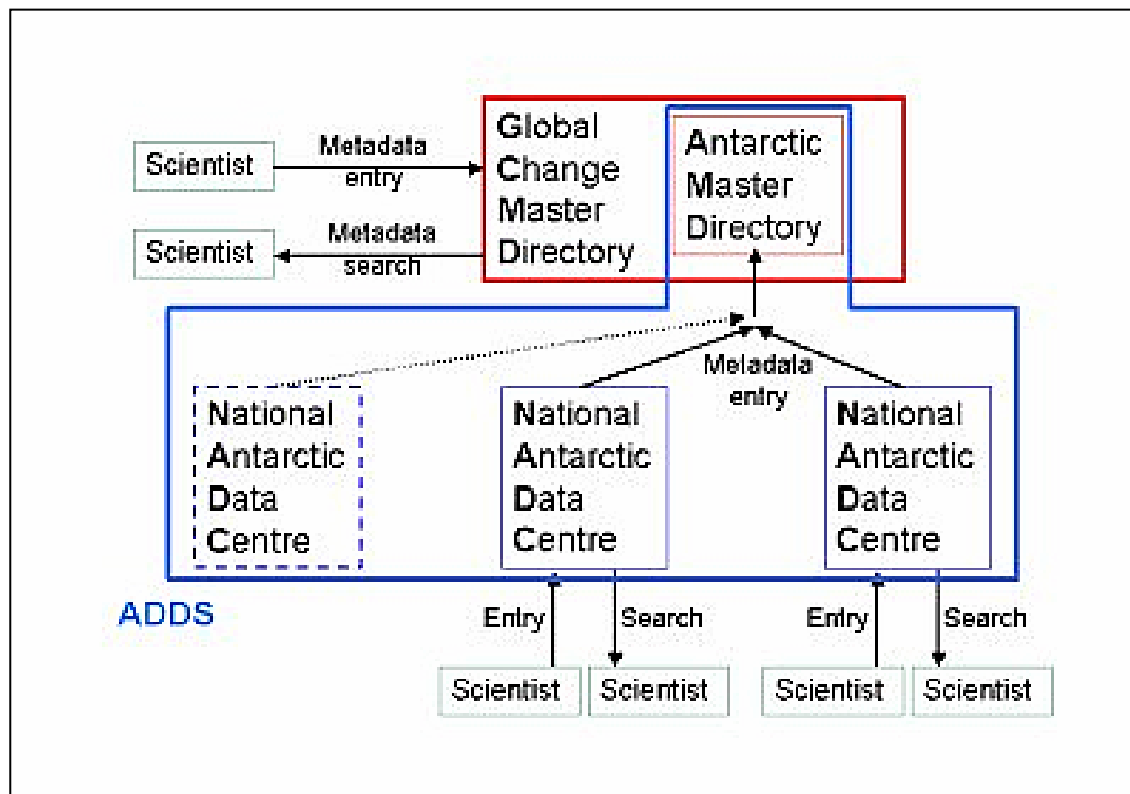
*Data sets range from a few (but unique!) observations at a particular time and place to millions of observations over many years and large areas*

- hosted by NASA's Global Change Master Directory (GCMD)




## Global inventory of Antarctic and Southern Ocean data set descriptions


*A network of National Antarctic Data Centres (NADC) linked to an Antarctic Master Directory (AMD)*



## Antarctic Master Directory:



**ANTARCTIC  
MASTER  
DIRECTORY**















A Global Change Master Directory Portal

HOME
DATA SEARCH
DATA SERVICES
AUTHORING TOOLS
NADC PORTALS
ABOUT US
GCMD HOME

- ▢ [About Portals](#)
- ▢ [GCMD Portal Listings](#)
- ▢ [Add to AMD](#)
- ▢ [View Writer's Guide](#)
- ▢ [AMD Data Sets](#)
- ▢ [JCADM Website](#)

### Find Data Sets by Topic:

<div style="margin-bottom: 10px;">  <p><b><u>Agriculture</u></b> soils , plant commodities ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Atmosphere</u></b> atmospheric temperature , atmospheric winds ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Biosphere</u></b> ecological dynamics , vegetation ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Climate Indicators</u></b> teleconnections , drought/precipitation indices ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Cryosphere</u></b> snow/ice , sea ice ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Human Dimensions</u></b> environmental impacts , boundaries ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Hydrosphere</u></b> surface water , water quality/water chemistry ...</p> </div>	<div style="margin-bottom: 10px;">  <p><b><u>Land Surface</u></b> soils , topography ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Oceans</u></b> ocean temperature , marine biology ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Paleoclimate</u></b> land records , ocean/lake records ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Solid Earth</u></b> rocks/minerals , geodetics/gravity ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Spectral/Engineering</u></b> visible wavelengths , infrared wavelengths ...</p> </div> <div style="margin-bottom: 10px;">  <p><b><u>Sun-Earth Interactions</u></b> solar activity , ionosphere/magnetosphere dynamics ...</p> </div>
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Data Set Text Search




[Map/Date Search](#)

[Search tips](#) ⓘ

Data Centers ▾ Locations ▾

Instruments ▾

Platforms/Sources ▾ Projects



**GCMD** [Search the entire GCMD database](#)

Clicking the link above will transfer you out of the portal you are viewing.



## Antarctic Master Directory:

**ANTARCTIC MASTER DIRECTORY**  
A Global Change Master Directory Portal

HOME DATA SEARCH DATA SERVICES AUTHORIZING TOOLS NADC PORTALS ABOUT US GCMD HOME

- o Agriculture
- o Atmosphere
- o Biosphere
- o Climate Indicators
- o Cryosphere
- o Human Dimensions
- o Hydrosphere
- o Land Surface
- o Oceans
- o Paleoclimate
- o Solid Earth
- o Spectral/Engineering
- o Sun-Earth Interactions

- o Data Centers
- o Locations
- o Instruments
- o Platforms/Sources
- o Projects

**Spatial Search**

[Instructions](#)

Map showing spatial search options with coordinates: N 90, W -180, E 180, S -90.

POWERED BY Google

**Keyword Search**

\_\_\_\_\_ in Full Text

and  or

\_\_\_\_\_ in Full Text

Search Reset

**Temporal Search**

This field is optional.  
Include?  YES  NO

Search between dates

Jan. 1 1950  
through  
Oct. 21 2006



## Antarctic Master Directory:

- Agriculture
- Atmosphere
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- Data Centers
- Locations
- Instruments
- Platforms/Sources
- Projects

[Instructions](#)

### Spatial Search

#### Keyword Search

petrel in Full Text ▼

and  or

in Full Text ▼

#### Temporal Search

This field is optional.

Include?  YES  NO

Search between dates ▼

Jan. 1 1950  
 through  
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Parameters > [\[Freetext='petrel'\]](#) > [\[Spatial Coverage INTERSECTS: Northernmost Latitude='-38', Southernmost Latitude='-81', Easternmost Longitude='49', Westernmost Longitude='-92'\]](#)

**Refine by Category**

Please select a field ▼ Go

**Refine by Free text**

Go

Limit results to MOSTLY within spatial map coverage. ⓘ

17 Titles Match Your Query

Showing 1 through 17 of 17

1. [Pelagic Studies of Marine Birds and Mammals \[NL\\_ANTARCTIC\\_BIRDS\\_MAMMALS\]](#)  
 During a number of cruises on Polarstern, densities of warm-blooded top predators were determined in relation to environmental parameters.
2. [Marine Pollution \[CDA\\_AR\\_QAMB\\_MARINE\\_POLLUTION\]](#)  
 This project involves the monitoring of trace elements in the Antarctic coastal ecosystem. Data will be available on the level of Cd, Cu, Cr, Zn, Pb and Hg in biota (mollusk, gastropod, ...
3. [Reproductive and nutrition biology of the Petrels \(Biología reproductiva y nutricia de los Petreles\) \[CDA\\_AR\\_BIO\\_PETRELS\]](#)  
 Breeding and feeding biology of fulmarine and hydrobatyds petrels at Antarctica Peninsula and Scotia Arc Islands is studied. The investigation includes studies on **petrel**





## Antarctic Master Directory:



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MASTER  
DIRECTORY**



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HOME
DATA SEARCH
DATA SERVICES
AUTHORING TOOLS
NADC PORTALS
ABOUT US
GCMD HOME

- Agriculture
- Atmosphere
- Biosphere
- Climate Indicators
- Cryosphere
- Human Dimensions
- Hydrosphere
- Land Surface
- Oceans
- Paleoclimate
- Solid Earth
- Spectral/Engineering
- Sun-Earth Interactions

---

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- Locations
- Instruments
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Parameters>[[Freetext='petrel']>[Spatial Coverage INTERSECTS: Northernmost Latitude='-38', Southernmost Latitude='-81', Easternmost Longitude='49', Westernmost Longitude='-92']

Brief Record
Distribution
Attributes
Coverage
Personnel
Full Record
Update Record

**Reproductive and nutrition biology of the Petrels (Biología reproductiva y nutricia de los Petreles)**

Geographic Coverage

**Southernmost Latitude:** -65.0  
**Westernmost Longitude:** -59.0  
**Northernmost Latitude:** -60.0  
**Easternmost Longitude:** -44.0  
**Minimum\_Altitude:** 0 M

Summary


2002-04-08

Breeding and feeding biology of fulmarine and hidrobatyds petrels at Antarctica Peninsula and Scotia Arc Islands is studied. The investigation includes studies on **petrel** breeding chronology; egg morphology and chick growth; breeding success; diet; activity; and energetic budget.

Periodic sampling of food items is conducted to analyze caloric contents and estimate food availability.



# Antarctic Master Directory:



**ANTARCTIC MASTER DIRECTORY**



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HOME
DATA SEARCH
DATA SERVICES
AUTHORING TOOLS
NADC PORTALS
ABOUT US
GCMD HOME

- o Agriculture
- o Atmosphere
- o Biosphere
- o Climate Indicators
- o Cryosphere
- o Human Dimensions
- o Hydrosphere
- o Land Surface
- o Oceans
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Parameters>[Freetext='petrel']>[Spatial\_Coverage INTERSECTS: Northernmost\_Latitude='-38', Southernmost\_Latitude='-81', Easternmost\_Longitude='49', Westernmost\_Longitude='-92']

Brief Record
Distribution
Attributes
Coverage
Personnel
Full Record
Update Record

**Distribution and abundance of Snow Petrels in the Antarctic**

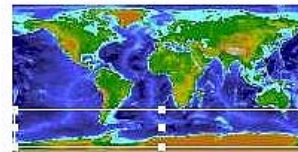
Geographic Coverage

Southernmost Latitude: -85.0  
Westernmost Longitude: -180.0  
Northernmost Latitude: -40.0  
Easternmost Longitude: 180.0

Summary

2006-06-07

The Snow **Petrel** *Pagodroma nivea* is endemic to Antarctica and the Southern Ocean, with a circumpolar breeding distribution. A comprehensive review of both the published literature and unpublished records revealed that Snow Petrels have been reported breeding at 298 localities, all of which are mapped. Breeding has been confirmed at 195 of these localities, is probable at 38 and considered only possible at 57 localities. Reports of breeding, or suspected breeding, by Snow Petrels at a further eight localities were not confirmed by subsequent investigation. Estimates of breeding population are available for only 108 of these colonies, thus it is not possible to estimate the total breeding population of Snow Petrels. However, counts of birds at sea suggest that the species' population must be in the order of several millions. Additional relevant data from Snow **Petrel** breeding localities should be forwarded to the SCAR Bird Biology Subcommittee to enable this initial database to be updated.



## Antarctic Master Directory:

### Data Center

**Data Center Name:** [AU/AADC >Australian Antarctic Data Centre, Australia](#) ⓘ  
**Data Center URL:** <http://www.aad.gov.au/default.asp?casid=3786>

### Personnel

**Name:** [DATA OFFICER AADC](#)  
**Phone:** +61 3 6232 3244  
**Fax:** +61 3 6232 3351  
**Email:** [metadata@aad.gov.au](mailto:metadata@aad.gov.au)  
**Contact Address:**  
 Australian Antarctic Division  
 203 Channel Highway  
**City:** Kingston  
**Province or State:** Tasmania  
**Postal Code:** 7050  
**Country:** Australia

### Related URL

**Content Type:** GET SERVICE  
**URL:** <http://www.aad.gov.au/default.asp?casid=3968>  
**Description:**  
 Biodiversity Database

**Content Type:** VIEW RELATED INFORMATION  
**URL:** <http://www.aad.gov.au/default.asp?casid=1609>  
**Description:**  
 Fact Files about Snow Petrels

**Content Type:** VIEW RELATED INFORMATION  
**URL:** [http://aadc-maps.aad.gov.au/aadc/metadata/citation.cfm?entry\\_id=SCA...](http://aadc-maps.aad.gov.au/aadc/metadata/citation.cfm?entry_id=SCA...)  
**Description:**  
 Citation reference for this metadata record and dataset





## Antarctic Master Directory:

### Australian Government Antarctic Division

*Antarctica - Valued, Protected, Understood*

**Experience >> Antarctica**

**Protecting >> the Environment**

**Science >>**

Science in Antarctica

Scientific research

Australian Centre for Applied Marine Mammal Science

International Polar Year 2007-08

**Fact Files**

Research Guidelines

Science Technical Support

[Home](#) > [Science](#) > [Fact Files](#) > [Flying birds](#) > [Petrels](#) >

- >> **Antarctic petrel**
- >> **Cape petrel**
- >> **Common diving-petrel**
- >> **Giant-petrels**
- >> **Snow petrel**
- >> **South Georgian diving-petrel**
- >> **Wilson's storm-petrel**

**Snow petrel**



**Snow petrel breeding pair at Reeve Hill, Casey.**  
Photograph by Eric Woehler

Snow petrels (*Pagodroma nivea*) are an all white, small fulmarine petrel with conspicuous dark eyes, small black bill and



## Antarctic Master Directory:

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HOME DATA SEARCH DATA SERVICES AUTHORIZING TOOLS NADC PORTALS ABOUT US GCMD HOME

Parameters > [{Freetext='dronning maud land'} AND {Freetext='ice cores'} > \[Spatial Coverage INTERSECTS: Northernmost Latitude='-67', Southernmost Latitude='-86', Easternmost Longitude='105', Westernmost Longitude='-36'\]](#)

Refine by Category: Please select a field

Refine by Free text:

**Limit results to MOSTLY within spatial map coverage.** ⓘ

**3 Titles Match Your Query**

Showing 1 through 3 of 3

- [European Project for \*\*Ice\*\* Coring in Antarctica \(EPICA\) \[NPI\\_00157\]](#)  
of the last glacial cycle. This drilling was started in **Dronning Maud Land** (about 75S, 0EW)... Within the European Project for **Ice** Coring in Antarctica (EPICA) two deep **ice cores**
- [Dronning Maud Land, Antarctica, \*\*Ice\*\* Core, 1991 and 1992 \[NSIDC-0089\]](#)  
Major ion concentration values (Na, Mg, Ca, Cl, NO<sub>3</sub>, SO<sub>4</sub>, MSA) were analyzed from a 20-meter **ice** core drilled in **Dronning Maud Land**, Antarctica (location - 65 01 East, 75 00
- [EPICA/DML \*\*Ice Cores\*\* 1997-98 \[89515570336092\]](#)  
10 **ice cores** were collected during the 1997/98 field season as part of the EPICA (European Programme of **Ice** Coring in Antarctica) DML (**Dronning Maud Land**) project.

Navigation menu (left):  
 Agriculture  
 Atmosphere  
 Biosphere  
 Climate Indicators  
 Cryosphere  
 Human Dimensions  
 Hydrosphere  
 Land Surface  
 Oceans  
 Paleoclimate  
 Solid Earth  
 Spectral/Engineering  
 Sun-Earth Interactions  
 Data Centers  
 Locations  
 Instruments  
 Platforms/Sources  
 Projects



## Antarctic Master Directory:

**Data Center Name:** NSIDC\_NOAA >National Oceanic and Atmospheric Administration ⓘ

**Data Center URL:** <http://nsidc.org/noaa/>

**Dataset ID:** NSIDC-0089

### Personnel

**Name:** NSIDC NOAA USER SERVICES

**Phone:** +1 (303) 492-6199

**Fax:** +1 (303) 492-2468

**Email:** nsidc at nsidc.org

**Contact Address:**

National Snow and **Ice** Data Center

CIRES, 449 UCB

University of Colorado

**City:** Boulder

**Province or State:** CO

**Postal Code:** 80309-0449

**Country:** USA

### Data Set Citation

**Dataset Creator:** Sallie Whitlow and Paul Mayewski

**Dataset Title:** **Dronning Maud Land**, Antarctica, **Ice** Core, 1991 and 1992

**Dataset Release Date:** 1999

**Dataset Release Place:** Boulder, CO U.S.A.

**Dataset Publisher:** National Snow and **Ice** Data Center (NSIDC)

**Online Resource:** <http://nsidc.org/data/nsidc-0089.html>

### Related URL

**Content Type:** GET DATA

**URL:** [ftp://sidads.colorado.edu/pub/DATASETS/AGDC/ICECORES/DRONNING\\_MAUD\\_...](ftp://sidads.colorado.edu/pub/DATASETS/AGDC/ICECORES/DRONNING_MAUD_...)

**Description:**

ftp access to data

**Content Type:** VIEW RELATED INFORMATION

**URL:** <http://nsidc.org/data/nsidc-0089.html>

**Description:**

Access to data and documentation.



## Antarctic Master Directory:

**FTP directory /pub/DATASETS/AGDC/ICECORES/DRONNING\_MAUD\_LAND/ at  
sidads.colorado.edu**

\*\*\*\*\*

Welcome to sidads at the National Snow and Ice Data Center.

National Snow and Ice Data Center FTP Archives

\*\*\*

If you need to contact someone at this site try the following:

For user services assistance contact:

email: [nsidc@nsidc.org](mailto:nsidc@nsidc.org)

phone: 303-492-6199

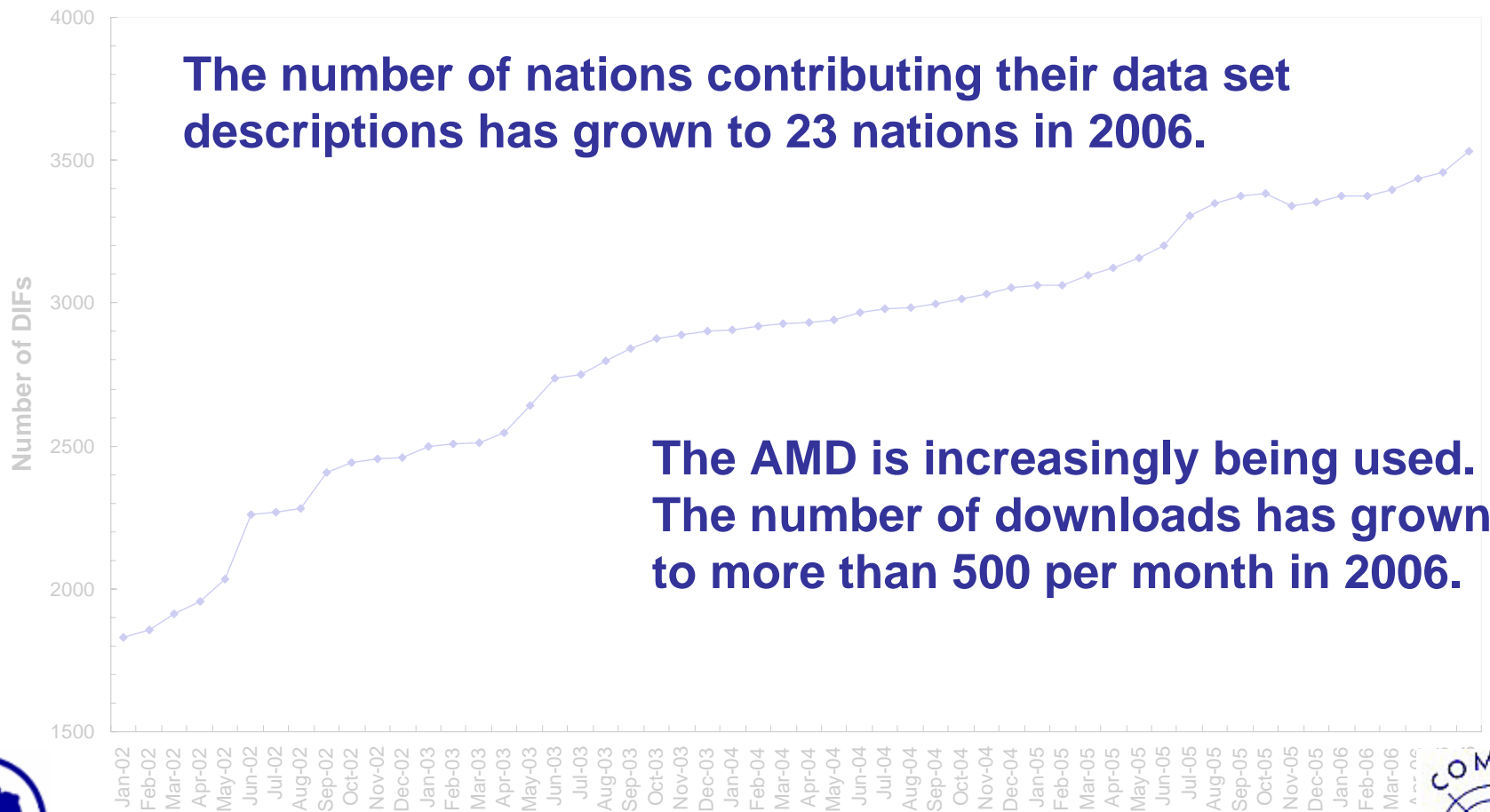
[Up to higher level directory](#)

03/30/2005 12:00AM	2,730	<a href="#">00README</a>
04/26/2000 12:00AM	32,708	<a href="#">dronning.dat</a>
10/10/2006 02:27PM	6,917	<a href="#">nsidc-0089_fgdc.xml</a>



## Antarctic Master Directory:

Number of DIFs from all AMD IDN\_Nodes - Content Growth





## **JCADM and IPY:**

**JCADM is working closely together with discipline-based peer organizations, such as the International Oceanographic Data and Information Exchange Committee (IODE) of the Intergovernmental Oceanographic Commission (IOC).**

- Controlled vocabularies**
- Southern Ocean database**



## JCADM and IPY:

**JCADM, a committee of National Antarctic Data Centers, will form, in close collaboration with the discipline based data centers, the Antarctic part of the IPY Data Infrastructure**



**Thank you for your attention**

