PNRA: The South-Pole Directory

USER'S MANUAL

S. Biagioni (1) C. Carlesi (1) G. Romano (2)
L. Rossi (3) D. Vannozzi (2)

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(1) Istituto di Elaborazione della Informazione - CNR - PISA
(2) CNUCE - CNR - PISA
(3) Area di Ricerca - CNR - Frascati (ROMA)

SOUTH-POLE DIRECTORY via ASTRA System

TITLE The South Pole Directory of the Italian Research in Antarctica.

PRODUCER PNRA (Italian Program for Research in Antarctica)
PROGETTO ANTARTIDE
ENEA-CASACCIA
301, Via Anguillarese I-00060 S.M. Di Galeria (RM) Italy
E.Mail: SPAN> 40337::ANTAR
Phone: +39 6 30483130 Fax +39 6 30484893

If you need more information or assistance:

CONTACT Stefania Biagioni(*), Carlo Carlesi(*), Giuseppe Romano(**)

(*)Istituto di Elaborazione della Informazione - CNR
Via S. Maria, 46
I-56100 Pisa - Italy
e.mail: pnra@pecos.iei.pi.cnr.it
(**)CNUCE - Istituto del CNR
Via S. Maria, 36
I-56100 Pisa - Italy
e.mail: romano@icnucevm.cnuce.pi.cnr.it

LANGUAGE English
HOST-SYS STAIRS/CMS
FRUPDT Irregular
UPDATE July 1992
DOCNUM 93 documents

Terra Nova Bay - 7° Expedition

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Introduction

In 1989, a working group was constitued at the "Istituto di Elaborazione della Informazione" of the Italian National Research Council (IEI-CNR), within the framework of the National Antarctic Research Programme (PNRA)[1], with the scope of providing ENEA with consulting services and technical support in information processing. The primary objective was to design and implement an integrated information system which would be based on the Antarctic Data Bank. Antarctic Data concerns research in Earth Sciences, Oceanography, Physics of the Atmosphere, Cosmophysics, Biology and Environmental studies and Medical Sciences.

The Italian base in Antarctica is located at Terra Nova Bay inside the Ross sea (Lat. 74 41'42'S, Long. 164 07'23'E). The expeditions take place during the Antarctic summer and usually run from early December until late February. The first expedition was began in late 1985.

The first activity of the joint-Project PNRA-IEI/CNR was to take a census of the research activities to implement a system for the storage, retrieval and distribution of data and results from the Italian expeditions in Antarctica. The census madesuse of the Directory Interchange Format (D.I.F.) of the National Space Science Data Center (NSSDC) and the data have been collected in the catalog, called **"South-Pole Directory"**.

The South-Pole Directory is the first multidisciplinary Antarctic directory which is accessible on-line on international network, via ASTRA[2] system and via ESA-PID[3] system

The implementation of the Directory has required more than 1 year with several readjustments to the original objective; at present, the Directory provides the user with a description of the research and the available data as well as the procedures to obtain data. Data can also be requested directly from the individual research-groups.

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(1) PNRA (Italian Program for Research in Antarctica) is run by the Italian Ministry for The Universities and Scientific and Technological Research.

(2) ASTRA - Data Base serrvice on the EARN/BITNET network. (see: Astra Database Service: The available Databases. CNUCE ZC 230-92, july 1992. G. Romano D. Vannozzi)

(3) ESA-PID - European Space Agency, Prototype International Directory.

The "South-Pole Directory" description

The choice to use the D.I.F. file structure was taken in order to make the Directory as freely accessible as possible to the whole International Scientific Community. (See also PNRA: South-Pole directory. User's manual of the Directory of the Italian Research in Antarctica under the appointment of the Italian National Program for Antarctic Research, ANT 92/11).

"The D.I.F. is a data structure used to exchange directory-level information about data sets among information systems. In general, the format consits of a number of fields that describe the attributes of a directory entry and text blocks that contain a descriptive summary of references for the directory entry. All fields and the summary are proceded by labels identifying their contents. All value are ASCII character strings. The structure is intending to be flexible, allowing for future changes in the contents of directory entries." (NSSDC - Rep. 90-27, 1990).

Directory entry: individual iields description

The Directory consists of a collection of "metadata" fields describing a group of data.

DOCUMENT - the unique identifier for the directory entry.

TITLE - a concise one or two line description of the directory entry which describes the basic content of the data set.

S-DATE, E-DATE - contains the date on which acquisition data began and the date on which it ended.

SOURCE - the spacecraft, platform, ship, ground station, etc, which contains the data sensors.The source name fields in the Directory are mainly related to the Italian Antarctic expeditons, but in a very few cases to the others(i.e. the LANDSAT or SPOT satellite). When the source is the Institute where the instruments are located, the short names, already adopted in the PNRA data base of the participants, were used.

SENSOR - the instrument or hardware used to acquire the data. The sensor names were checked on available lists, in order to avoid duplication of short names.

INVESTIGATOR - the person who headed the investigation which resulted in the acquisition of the data.

TECH-CONTACT - the person to be conducted for detailed technical information about the content and processing of the data set.

AUTHOR - the person who writes the DIF and who is responsible for the accuracy of the information in the directory entry.

DATA_CENTER - identifies the storage location or the data system which catalogs the data set and the person who is responsible of the center.The Data Center names are all taken from the file of the PNRA data base of the participants.

PROJECT: - describes the specific campaign, or scientific project; in this case must be "PNRA > Programma Nazionale Ricerche in Antartide".

MEDIA - describes the quantity and medium type on which the data are stored.

PARAMETERS - describes the contents of the data set in terms of the geophysical properties measured.

DISCIPLINE - These keywords describe the scientific area of application for the data set being described.

LOCATION - general place names.

KEYWORD - These are keywords or phrases not already found in the Parameter, Discipline or Location Keyword fields. DIF allows two type of keywords: restricted keywords and free keywords. The restricted keywords must be chosen from a well-defined set according to the Location, Discipline and Parameters (subset-extensions are also possible). Free keywords, instead, (unlimited in number, but without any extension) are used to better identify the particular data set (or the research). The limitations on this set are related to the choice or are very close to the standard DIF syntax and to the possibility of being supported using the Prototype International Directory (PID) of the European Space Agency in Frascati (Esrin-Epocat Program).

COVERAGE - indicates, in whole degrees, the spatial coverage of the earth-located data described by the directory entry.

R-DATE - the date that the entry was created or the last time it was modified or updated.

F-DATE - a future date at which the data described in the entry will be modified.

REFERENCE - contains a few key bibliographic references pertaining to the data set described by the directory entry.

SUMMARY - contains text describing the data set.

The focal points

Here in the following the Focal Points of the South-Pole Directory are listed:

** ***Biagioni Stefania***
IEI-CNR
46, Via S. Maria I-56100 Pisa Italy
E_Mail: INTERNET> BIAGIONI@IEI.PI.CNR.IT
SPAN> CNUCE::BIAGIONI
Phone: +39 50 593481 Fax: +39 50 554342

** ***Carlesi Carlo***
IEI-CNR
46, Via S. Maria I-56100 Pisa Italy
E_Mail: INTERNET> CARLESI@IEI.PI.CNR.IT
SPAN> CNUCE::CARLESI
Phone: +39 50 593483 Fax: +39 50 554342

** ***Ramorino Maria Chiara***
PROGETTO ANTARTIDE
ENEA-CASACCIA
301, Via Anguillarese I-00060 S.M. Di Galeria (RM) Italy
E_Mail: SPAN> 40337::ANTAR
Phone: +39 6 30483130 Fax: + 39 6 30484893

** ***Rossi Lucio***
ARF/CNR
70, Via E. Fermi I-00044 Frascati (RM) Italy
E_Mail: SPAN> astrom::rossi_l
Phone: +39 6 9417162 Fax: + 39 6 9417166

** With the support of the **ASTRA Working Group**
CNUCE/CNR
36, Via S. Maria I-56100 Pisa Italy
E_Mail: astra-wg@icnucevm.cnuce.cnr.it
Phone: +39 50 593248 Fax: +39 50 593212

The access to the PNRA database

The PNRA database has been stored on the computers of the CNUCE. CNUCE is an Institute of the Italian Reasearch Council. The PNRA database can be accessed in three different free of charge ways by the users connected to the international research networks (Internet).

- o Via electronic mail through the ASTRA service.

- o Doing a pseudo-online access using the ASTRA service on the EARN/BITNET network.

- o Doing an online session using the query and print language of the database system which manages the information.

ASTRA is a free service to access databases located in different nodes of the EARN network using the same query language. ASTRA has been developed to run in a IBM/VM environment. The system is composed by some cooperating database servers and some user interfaces. The user interfaces are able, via message or electronic mail, to start a database access on the database server where the database is stored. The ASTRA service started in January 1990 and is queried about 1000 time a months.

EARN is the European and Academic Research Network using the NJE protocols. EARN is the european version of BITNET and is completely connected with it. The ASTRA system has been developed at CNUCE by the ASTRA project team. The first version accessed the IBM study contracts database and other italian databases located on the EARN network. The databases were managed by an information retrieval system of IBM named STAIRS/CMS. Afterwards it was decided to interface some other I.R.S systems and a DataBase Management system based on the relational model. Today the system interface uses the same query language to access the following host IRS or DBMS systems:

- o STAIRS/CMS, produced and distributed by IBM
- o ISIS, produced and distributed by LAD at UNESCO Paris.
- o SQL/DS produced by IBM for the VM operating system.
- o SAS/VM produced by SAS Institute for VM operating system.
- o FOCUS/VM produced by IBI for VM operating system.

The SQL/DS relational DBMS, the SAS system and the FOCUS system are accessed via stored parametric queries.

For more detail see:

- o ASTRA Data Base Server: System Specifications - CNUCE 224-90
- o ASTRA Data Base Server: Installation Maintenance and Command Reference Manual - CNUCE 226-90

You can obtain an electronic copy of the documentation just sending the following command:

sendme astrafs document (CNUCE 224-90)

sendme astraimm document (CNUCE 226-90)

to ASTRADB at ICNUCEVM using the TELL (IBM/VM) or SEND (DEC/VMS) command on the EARN network, or, sending the command, via e.mail, to

astradb@icucevm.cnuce.cnr.it on the other networks connected to EARN/BITNET via RFC822 mail gateways.

The online access.

Since the PNRA database has been managed by the STAIRS/CMS running on a IBM/VM machine, to access it you must logon on ICNUCEVM.CNUCE.CNR.IT. To do it, please contact:

Carlo Carlesi
Istituto di Elaborazione della Informazione
Via Santa Maria 76, 56100 Pisa - Italy
e.mail:Carlesi@iei.pi.cnr.it
phone: +39 50 593483 - fax: +39 50 554342

Some help functions are available during the online session. For more detail about the query language see: STAIRS/CMS Information Retrieval Guide - IBM SH12-5366-2.

The pseudo online access.

The pseudo online access is available using the ASTRA service on EARN/BITNET. To obtain the user interface and the user manual send the following command:

subscribe system=<system> your-full-name

to ASTRADB at ICNUCEVM using the TELL (IBM/VM) or SEND (DEC/VMS) command on the EARN network, or, sending the command, via e.mail, to astradb@icucevm.cnuce.cnr.it on the other networks connected to EARN/BITNET via RFC822 mail gateways.

<system> may be VM for IBM/VM or VAX for DEC/VMS (default value is VM).

Install the user interface as suggested in the ASTRA User Guide manual and start your activity. The user interface is completely self explanatory.

The E.Mail access.

The e.mail access to the PNRA database is allowed to the whole user community belonging to Internet. To access the database send a mail to astradb@icnucevm.cnuce.cnr.it containing your request according the ASTRA batch query language. When the selection will be finished you will receive two mail files:

A file containing the log of the your request.

A file containing the information selected by your request.

Astra batch query language

The following is a formal description of the ASTRA batch query language. The symbol ------ means that the request can contains as many lines you like.

StartRequest: Username: <username> Host: <host>
Dbname: <dbname> Typeresult: <typeresult>
= <querytext>
= <querytext>

= <querytext>
Printformat: <format>
Dbname: <dbname> Typeresult: <typeresult>
= <querytext>
= <querytext>

= <querytext>
Printformat: <format>

Printformat: <format>
Dbname: <dbname> Typeresult: <typeresult>
= <querytext>
= <querytext>

= <querytext>
Printformat: <format>
EndRequest:

where:

o <username> is the name of the user.

o <host> is the computer name site.

o <dbname> is the name of one of the available databases on the ASTRA system.

o <typeresult> is the type of required result:

- Numeric : the number of the selected documents.

- Document : the documents selected.

- Software : the software belonging to the selected documents.

o <querytext> is the query request in the STAIRS/CMS (1) query language or in the Host system query language (SQL stored query (2), ISIS query language(3))

o <format> is the format required :

- STAIRS mail format specification

- ISIS stored format name

- SQL interface specification: H=Y/N,F=T/C

-- H=Y/N : if the heading is required or not

-- F=T/C : if a Tabular or Commadelimited format is required.

Pay attention

1 See: STAIRS/CMS Information Retrieval Guide - IBM SH12-5366-2

2 See: SQL/Data System Terminal User's Guide for VM/System product IBM SH24-5045-1

3 See: Unesco Computerized System CDS/ISIS Terminal Operator's Manual

o Any keywords of the batch language can by identified just using its first capital letter followed by ":" sign (i.e.: S: has the same meaning then StartRequest)

o Any keywords must be separated from its value by at least a "blank" character.

Some examples accessing the PNRA database

In the next paragraphes two different examples accessing PNRA database are presented.

o The first to select the documents about some researches at the "Ross Sea" about the "Mollusca"

o The second to select the documents about some researchs at the "Ross Sea" about "Mollusca" having arguments concerning the "Foraminifera" located in the "Terranova Bay".

If like to know much more information about PNRA database organization and about contact persons send to astradb@icnucevm.cnuce.cnr.it a mail containing, in the ASTRA batch language, the following lines:

s: u: <your-userid> h: <your-hostid>
d: meta t: d
= meta.dbname.
e:

You will receive a brief, but complete description about the database PNRA.

Example 1: sending a request.

==========

Date: Wed, 08 Jul 92 09:13:49 MET
From: Giuseppe Romano <ROMANO@ICNUCEVM.CNUCE.CNR.IT>
Subject: Access via e.mail to PNRA database
To: Astra database server <ASTRADB@ICNUCEVM>

/* the line contains the start command and the user and node identification */
s: u: romano h: icnucevm.bitnet

/* the line does the database selection and the selection of the results */
d: pnra t: d

/* now we are looking for the documents about the MOLLUSCA located in the */
/* ROSS SEA. Note that the '=' sign means start the search */
= ross adj sea and mollusca.keywords.

/* the next commands start the printing of the selected documents */
/* By default the whole document is assumed */

p:

/* the next commands means end the database acces */
e:

Example 1: receiving the log of the request

```
==========================================================================
Received: from ICNUCEVM.CNUCE.CNR.IT (ASTRADB) by
ICNUCEVM.CNUCE.CNR.IT (Mailer
R2.08 ptf012) with BSMTP id 6807; Wed, 08 Jul 92 09:15:21 MET
Date: Wed, 08 Jul 92 09:15:20 MET
From: astra database server <ASTRADB@ICNUCEVM.CNUCE.CNR.IT>
Subject: ASTRA-reply
To: ROMANO@ICNUCEVM.CNUCE.CNR.IT

--------------------------------------------------------------------
Request received from ROMANO at ICNUCEVM on 08/07/92 at 09:15:11
--------------------------------------------------------------------
active database is : PNRA
Requested selection #1 : ROSS ADJ SEA AND MOLLUSCA.KEYWORDS.
ROSS 161 OCCURRENCES 54 DOCUMENTS
SEA 255 OCCURRENCES 57 DOCUMENTS
MOLLUSCA 2 OCCURRENCES 2 DOCUMENTS
RESULT 2 OCCURRENCES 2 DOCUMENTS
Result has been sent to you as ASTRA DOCUMENT
```

Example 1: receiving the documents selected

```
==========================================================================
Received: from ICNUCEVM.CNUCE.CNR.IT (ASTRADB) by
ICNUCEVM.CNUCE.CNR.IT (Mailer
R2.08 ptf012) with BSMTP id 6814; Wed, 08 Jul 92 09:15:29 MET
Date: Wed, 08 Jul 92 09:15:28 MET
From: astra database server <ASTRADB@ICNUCEVM.CNUCE.CNR.IT>
Subject: ASTRA-reply
To: ROMANO@ICNUCEVM.CNUCE.CNR.IT

--------------------------------------------------------------------
0 ASTRA service on database PNRA
Print produced on 08/07/92 at 09:15:14 by ASTRADB at ICNUCEVM
0 ----------------------------------------------------------------
0 Requests received from ROMANO at ICNUCEVM
0 Active database is : PNRA
0 Requested selection #1 : ROSS ADJ SEA AND MOLLUSCA.KEYWORDS.
ROSS 161 OCCURRENCES 54 DOCUMENTS
SEA 255 OCCURRENCES 57 DOCUMENTS
MOLLUSCA 2 OCCURRENCES 2 DOCUMENTS
RESULT 2 OCCURRENCES 2 DOCUMENTS
1 *** DATABASE: PNRA DOCUMENT: PNRA-4 PAGE 0002
-
TITLE Biology of antarctic molluscs studies on heavy metals
S-DATE 1987-12-01
SENSOR AASPH > ATOMIC ABSORPTION SPECTROPHOTOMETER
ILAB1 > INSTRUMENTATION LABORATORY, IL S19
ILAB2 > INSTRUMENTATION LABORATORY, IL 740 CARBONROD
SOURCE PIUDBSIP > DEPT. OF EXPER. BIOMEDICINE
INVESTIGATOR
Orlando
Enzo
```

FAX > +39 50 501085
+39 50 501078
Dipartimento di Biomedicina Sperimentale
via Volta,4
I-56100 Pisa (ITALY)
TECH-CONTACT
Regoli
Francesco
FAX > +39 50 501085
+39 50 501078
Dipartimento di Biomedicina Sperimentale
via Volta, 4
I-56100 Pisa (ITALY)
AUTHOR Orlando
Enzo
DATA-CENTER
PIUDBSIP > DEPT. OF EXPER. BIOMEDICINE
Regoli
Francesco
FAX > +39 50 501085
+39 50 501078

Dipartimento di Biomedicina Sperimentale
via Volta, 4
I-56100 Pisa (ITALY)
ORG-CENTER
PIUDBSIP
PROJECT-ID
PNRA > Programma Nazionale di Ricerche in Antartide
MEDIA MAGNETIC DISK, 760KB
PARAMETERS
BIOLOGICAL ENTITIES > MINOR SPECIES
DISCIPLINE
EARTH SCIENCE > OCEAN
LOCATION ANTARCTICA
KEYWORDS TERRA NOVA BAY
ENVIRONMENTAL IMPACT
TRACE ELEMENTS
PHYSIOLOGY
BIOLOGY
METABOLISM
1 *** DATABASE: PNRA DOCUMENT: PNRA-4 PAGE 0003
- ENZYME
CYTOCHEMISTRY
CYTOLOGY
BIOCHEMISTRY
ADAPTATION
HEAVY METALS
MOLLUSCA
ROSS SEA
R-DATE 1992-05-31
F-DATE 1993-05-31
REFERENCE
Cognetti Alfinito, G., Mauri, M., Nigro, M., Orlando, E., Panichi, M. and Regoli, F., Contributo alla conoscenza del bivalve antartico Adamussium colbecki (Smith) della Baia di Ross: metalli pesanti. 1st Biological meeting of the Progetto Nazionale Ricerche in Antartide, Roma 1989, Scienza e Cultura (1991), 343-363.

Cognetti Alfinito, G., Mauri, M., Nigro ,M., Orlando,E., Panichi, M. and Regoli, F., Heavy metals in the digestive gland of the bivalve Adamussium colbecki (Smith), XXV European Marine Biology Simposium, Ferrara 1990.
Mauri, M., Orlando, E., Nigro, M. and Regoli, F., Heavy metals in the Antarctic scallop Adamussium colbecki (Smith), Mar. Ecol. Progr. er. 1990, 67, 27-33.
Nigro, M., Orlando, E. and Regoli F.,: Ultrastructural localization of metal binding sites in the kidney of the Antarctic scallop Adamussium colbecki (Smith), Mar. Biol. 1992, in press.
Berkman, P.A. and Nigro, M., Trace metal concentrations in scallops around Antarctica: extending the "mussel watch" program to the southern ocean. Mar. pollut. bull 1992, in press.
Nigro, M., Orlando, E. and Regoli, F., Ultrastructural study of intracellular metal binding sites in the kidney cells of the Antarctic scallop Adamussium colbecki (Smith), XXVI European Marine Biology Symposium, Middelburg, The Nederlnds 1991.
SUMMARY This data set contains data of concentrations of heavy metals (Cu, Fe, Mn, Zn,Cd) in the Antarctic Bivalve Adamussium colbecki. Gills, digestive glands, kidneys, gonads (male and female gonad), muscle were utilized. Data are structured and elaborated by DB3 system.

1 *** DATABASE: PNRA DOCUMENT: PNRA-70 PAGE 0004
-
TITLE Biological oceanography benthic communities (benthic bionomy and zoobenthos) of Terra Nova Bay (Ross Sea)
S-DATE 1988-01-01
SENSOR GBM > GRAB MACHINE
DRG > DREDGE SYSTEM
TVCAM > VIDEO CAMERA, REMOTELY OPERATED
SOURCE AV > AUXILIARY VESSEL
RB > RUBBER BOAT
BTNS > ROSS SEA, TERRA NOVA BAY
INVESTIGATOR
Di Geronimo
Sebastiano
Italo
FAX > +39 95 381346
+39 95 381346
Istituto Policattedra di Oceanologia e Paleoecologia
Universita' degli Studi
Corso Italia, 55
I-95129 Catania (ITALY)
TECH-CONTACT
Rosso
Antonietta
FAX > +39 95 381346
+39 95 381346
Istituto Policattedra di Oceanologia e Paleoecologia
I.P.O.P.
Corso Italia, 55
I-95129 Catania (ITALY)
AUTHOR Di Geronimo
Sebastiano
Italo
FAX > +39 95 381346
+39 95 381346
Istituto Policattedra di Oceanologia e Paleoecologia
Universita' degli Studi

Corso Italia, 55
I-95129 Catania (ITALY)
DATA-CENTER
CTUIPOP > INST. FOR OCEANOLOGY, PALEOECOLOGY
Di Geronimo
Sebastiano
Italo
FAX > +39 95 381346
+39 95 381346
Istituto Policattedra di Oceanologia e Paleoecologia
Universita' degli Studi
Corso Italia, 55
I-95129 Catania (ITALY)
ORG-CENTER
1 *** DATABASE: PNRA DOCUMENT: PNRA-70 PAGE 0005
- CTUIPOP

PROJECT-ID
PNRA > Programma Nazionale di Ricerche in Antartide
MEDIA MAGNETIC DISK
35 mm SLIDES
VIDEO CASSETTE > U MATIC > PAL
PARAMETERS
BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > MINOR SPECIES
DISCIPLINE
EARTH SCIENCE > OCEAN
COVERAGE 74S
76S
163E
168E
LOCATION ANTARCTICA
KEYWORDS BIOLOGY
ECOLOGY
ZOOECOLOGY
TERRA NOVA BAY
BENTHONIC COMMUNITIES
POLYCHAETA
FORAMINIFERA
OSTRACODA
PYCNOGONIDS
MOLLUSCA
BRYOZOA
ROSS SEA
R-DATE 1992-05-31
F-DATE 1993-05-31
REFERENCE
Di Geronimo, I. and Rosso, A., First Italian Oceanographic expedition in the Ross Sea, Antarctica. Benthos: a preliminary report, Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep., (1990) I, 407-421, 1990.
Rosso, A., Bryozoan Community of IB3 station (Ross Sea, Antarctica). Nat. Sc. Com. Ant. Ocean. Camp. 1987-88, Data Rep., (1990) I, 423-438, 1990.
Violanti, D., Distribution of living benthic foraminifera from Terra Nova Bay (Antarctica) - Preliminary Report., Nat. Sc. Com. Ant., Ocean. Camp., 1987-88, Data Rep., (1990) II, 233-237, 1990.
Violanti, D., Preliminary data on living foraminifera from Terra Nova bay, Antarctica (sample IB3). Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep. (1990) I, 439-442, 1990.

SUMMARY Two oceanographic benthic expeditions have been carried out during the austral summers 1987/88 and 1989/90.More than 200 stations, from the sea level to about 1100 metres depth have been sampled by means of a Van Veen grab and a Picard dredge or by diving.Videocassette filmed by means of a rov have been used to recognize the relations between the benthic communities and the type of substratum and the ecotons. The study of the benthic communities has been carried out following the Peres and Picard benthic model. The final aim of the benthic research at Terra Nova Bay (Ross Sea, Antarctica) consists

1 *** DATABASE: PNRA DOCUMENT: PNRA-70 PAGE 0006
- in; 1) drawing up a systematic list of the benthic fauna;
2) recognition of the benthic communities, both of hard and soft bottoms;
3) drawing up a preliminary map of the benthic communities.
- - - - - E N D O F P R I N T R E Q U E S T - - - -

Example 2: sending a request

==========

Date: Wed, 08 Jul 92 10:14:04 MET
From: Giuseppe Romano <ROMANO@ICNUCEVM.CNUCE.CNR.IT>
Subject: Access to PNRA database via e.mail
To: Astra database server <ASTRADB@ICNUCEVM>

/* the line contains the start command and the user and node identification */
s: u: romano h: icnucevm.bitnet

/* the line does the database selection and the selection of the results */
d: pnra t: d

/* now we are looking for the documents about the MOLLUSCA located in the */
/* ROSS SEA and the FORAMINIFERA in the TERRANOVA BAY */
/* The first selection (named query 1). */
= ross adj sea and mollusca.keywords.

/* The second and tird selection (named query 2 and 3). */
/* Note that TERRA NOVA has the same meaning than TERRANOVA */
= terra adj nova adj bay or terranova adj bay
= 2 and foraminifera.keywords.

/* The last selection, the fourth (named query 4) */
= 1 and 3

/* The next command starts the printing of the selected documents. */
/* Just the field: Discipline, r-dat, f-date, summary and reference */
/* will be printed. */
p: discipline,r-date,summary,f-date,reference

/* the next command ends the access to the database */
e:

Example 2: receiving the log of the request

```
==========================================================================
Received: from ICNUCEVM.CNUCE.CNR.IT (ASTRADB) by
ICNUCEVM.CNUCE.CNR.IT (Mailer
R2.08 ptf012) with BSMTP id 9834; Wed, 08 Jul 92 10:16:39 MET
Date: Wed, 08 Jul 92 10:16:37 MET
From: astra database server <ASTRADB@ICNUCEVM.CNUCE.CNR.IT>
Subject: ASTRA-reply
To: ROMANO@ICNUCEVM.CNUCE.CNR.IT

--------------------------------------------------------------------
Request received from ROMANO at ICNUCEVM on 08/07/92 at 10:16:28
--------------------------------------------------------------------

active database is : PNRA
Requested selection #1 : ROSS ADJ SEA AND MOLLUSCA.KEYWORDS.
ROSS 161 OCCURRENCES 54 DOCUMENTS
SEA 255 OCCURRENCES 57 DOCUMENTS
MOLLUSCA 2 OCCURRENCES 2 DOCUMENTS
RESULT 2 OCCURRENCES 2 DOCUMENTS
Requested selection #2 : TERRA ADJ NOVA ADJ BAY OR TERRANOVA ADJ
BAY
TERRA 204 OCCURRENCES 65 DOCUMENTS
NOVA 175 OCCURRENCES 62 DOCUMENTS
BAY 184 OCCURRENCES 64 DOCUMENTS
TERRANOVA 2 OCCURRENCES 2 DOCUMENTS
BAY 184 OCCURRENCES 64 DOCUMENTS
RESULT 167 OCCURRENCES 62 DOCUMENTS
Requested selection #3 : 2 AND FORAMINIFERA.KEYWORDS.
2 TERRA ADJ NOVA ADJ BAY O 167 OCCURRENCES 62 DOCUMENTS
FORAMINIFERA 3 OCCURRENCES 1 DOCUMENT
RESULT 1 OCCURRENCE 1 DOCUMENT
Requested selection #4 : 1 AND 3
1 ROSS ADJ SEA AND MOLLUSC 2 OCCURRENCES 2 DOCUMENTS
3 2 AND FORAMINIFERA.KEYWO 1 OCCURRENCE 1 DOCUMENT
RESULT 1 OCCURRENCE 1 DOCUMENT
Result has been sent to you as ASTRA DOCUMENT
```

Example 2: Receiving The Documents Selected

```
==========================================================================
Received: from ICNUCEVM.CNUCE.CNR.IT (ASTRADB) by
ICNUCEVM.CNUCE.CNR.IT (Mailer
R2.08 ptf012) with BSMTP id 9854; Wed, 08 Jul 92 10:16:51 MET
Date: Wed, 08 Jul 92 10:16:41 MET
From: astra database server <ASTRADB@ICNUCEVM.CNUCE.CNR.IT>
Subject: ASTRA-reply
To: ROMANO@ICNUCEVM.CNUCE.CNR.IT

--------------------------------------------------------------------
0 ASTRA service on database PNRA
Print produced on 08/07/92 at 10:16:33 by ASTRADB at ICNUCEVM
0 ----------------------------------------------------------------
0 Requests received from ROMANO at ICNUCEVM
0 Active database is : PNRA
0 Requested selection #1 : ROSS ADJ SEA AND MOLLUSCA.KEYWORDS.
```

ROSS 161 OCCURRENCES 54 DOCUMENTS
SEA 255 OCCURRENCES 57 DOCUMENTS
MOLLUSCA 2 OCCURRENCES 2 DOCUMENTS
RESULT 2 OCCURRENCES 2 DOCUMENTS
0 Requested selection #2 : TERRA ADJ NOVA ADJ BAY OR TERRANOVA ADJ BAY
TERRA 204 OCCURRENCES 65 DOCUMENTS
NOVA 175 OCCURRENCES 62 DOCUMENTS
BAY 184 OCCURRENCES 64 DOCUMENTS
TERRANOVA 2 OCCURRENCES 2 DOCUMENTS
BAY 184 OCCURRENCES 64 DOCUMENTS
RESULT 167 OCCURRENCES 62 DOCUMENTS
0 Requested selection #3 : 2 AND FORAMINIFERA.KEYWORDS.
2 TERRA ADJ NOVA ADJ BAY O 167 OCCURRENCES 62 DOCUMENTS
FORAMINIFERA 3 OCCURRENCES 1 DOCUMENT
RESULT 1 OCCURRENCE 1 DOCUMENT
0 Requested selection #4 : 1 AND 3
1 ROSS ADJ SEA AND MOLLUSC 2 OCCURRENCES 2 DOCUMENTS
3 2 AND FORAMINIFERA.KEYWO 1 OCCURRENCE 1 DOCUMENT
RESULT 1 OCCURRENCE 1 DOCUMENT
1 *** DATABASE: PNRA DOCUMENT: PNRA-70 PAGE 0002
-
DISCIPLINE
EARTH SCIENCE > OCEAN
R-DATE 1992-05-31
F-DATE 1993-05-31
REFERENCE

Di Geronimo, I. and Rosso, A., First Italian Oceanographic expedition in the Ross Sea, Antarctica. Benthos: a preliminary report, Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep., (1990) I, 407-421, 1990.

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Violanti, D., Distribution of living benthic foraminifera from Terra Nova Bay (Antarctica) - Preliminary Report., Nat. Sc. Com. Ant., Ocean. Camp., 1987-88, Data Rep., (1990) II, 233-237, 1990.

Violanti, D., Preliminary data on living foraminifera from Terra Nova bay, Antarctica (sample IB3). Nat. Sc. Com. Ant., Ocean. Camp. 1987-88, Data Rep. (1990) I, 439-442, 1990.

SUMMARY Two oceanographic benthic expeditions have been carried out during the austral summers 1987/88 and 1989/90.More than 200 stations, from the sea level to about 1100 metres depth have been sampled by means of a Van Veen grab and a Picard dredge or by diving.Videocassette filmed by means of a rov have been used to recognize the relations between the benthic communities and the type of substratum and the ecotons. The study of the benthic communities has been carried out following the Peres and Picard benthic model. The final aim of the benthic research at Terra Nova Bay (Ross Sea, Antarctica) consists in; 1) drawing up a systematic list of the benthic fauna; 2) recognition of the benthic communities, both of hard and soft bottoms; 3) drawing up a preliminary map of the benthic communities.

-----ENDOFPRINTREQUEST----

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Appendixes

The list of special terms and keywods used are given in Appendixes A,B,C,D, and E. (extracted from "South - Pole Directory User's Manual (Ant 92/11)").

Appendix A

Restricted keywords of the DIF-FILE

All the keywords are from the
DIRECTORY INTERCHANGE FORMAT MANUAL, Version 4.0
(with updating from ESA PID)

DISCIPLINE KEYWORDS

(for each discipline of the set, which is underlined, a list of sub-disciplines is given)

DIF format: discipline > sub-discipline

Astronomy

Cosmic Ray Astronomy
Gamma Ray Astronomy
Infrared Astronomy
Microwave Astronomy
Radio Astronomy

Ultraviolet Astronomy
Visible Astronomy
X-Ray Astronomy

Earth Science

Atmosphere
Interior and Crust
Land
Ocean

Planetary Science

Fields and Particles
Planetary Atmospheres
Planetary Geophysics
Small Bodies

Solar Physics

Chromosphere
Gamma-Ray Observations
Infrared Observations
Microwave Observations
Photosphere

Radio Observations
Ultraviolet Observations
Visible Observations
X-Ray Observations

Space Physics

Interplanetary Studies
Ionospheric Science
Magnetospheric Science

LOCATION KEYWORDS

Africa
Antarctica
Arctic Ocean
Asia
Association of Stars

Asteroids
Atlantic Ocean
Australia

Boundary Layer

Chromosphere
Cluster of Galaxies
Comets
Core
Corona

Crust

Equatorial
Eurasia
Europe
Extended Objects (Astronomy)

Galaxies
Global

High Latitude Magnetosphere

Indian Ocean
Inner Magnetosphere
Interplanetary (deep Space)
Interplanetary (near Earth)
Interstellar Medium

Ionosphere

Jupiter

Local Group of Galaxies

Magnetosphere (other)
Magnetotail
Mantle
Mars
Mediterranean Sea

Mercury
Mesosphere
Meteoroids
Mid-Latitude
Milky Way Galaxy

Moon (Earth)
Moons (other)

Neptune
North America
Novae

Pacific Ocean
Photosphere
Pluto
Polar

Quasars

Radio Sources
Rings (planetary)

Saturn
Sea Floor
Sea Surface
Solar Interior
South America

Southern Ocean
Star Clusters
Stars
Stratosphere
Supernova Remnants
Supernovae

Troposphere

Uranus

Venus

PARAMETER KEYWORDS

(for each parameter of the set, which is underlined, a list of sub-parameters is given)

DIF format : parameter > sub-parameter

Radiance and imagery

Gamma Ray
Infrared
Microwave
Radio Wave
Ultraviolet

Visible
X-Ray

Magnetic and Electric Fields

Activity Indices
Electric Fields (DC)
Electric Wave Spectra (AC)
Magnetic Fields (DC)
Magnetic Wave Spectra (AC)

Charged Particles

Alpha Particles
Composition
Density
Differential Flux
Distribution Functions

Electron Flux
Energetic Particles
Heavy Ions
Proton Flux
Speed

Temperature

Neutral Particles

Composition
Density
Distribution Functions
Flux
Speed

Temperature

Solar Properties

Active regions
Coronal Holes
Events
Filaments
Flares

Imagery
Prominences
Sunspots
Synoptic Maps
Velocity Fields

Astronomical Parameters

Abundances
Bibliography
Binaries
Colors
Cross Identifications

Ephemerides
Imagery
Magnetic Fields
Magnitudes
Masses
Models
Morphology
Objects Counts
Occultations
Parallaxes

Photometry
Polarization
Positions
Proper Motions
Radial Velocities

Reddening
Redshifts
Rotational Velocities
Space Velocities
Spectra

Spectrophotometry
Variability

Atmospheric Composition

Aerosols
Air Quality
Ash
Atmospheric Liquid Water
Carbon Dioxide

Chlorofluorocarbons
Clouds
Contaminants
Humidity
Methane

Nitric Acid
Nitrogen
Nitrogen Oxide
Oxygen

Ozone

Trace Elements
Trace Gases
Tracers
Water Vapor

Atmospheric Dynamics

Altitude
Atmospheric Temperature
Cloud Types
Evaporation
Evapotranspiration

Geopotential Height
Heat Flux
Humidity
Paleoclimate Indicators
Paleoclimate Indices

Paleoclimate Indicies
Precipitation
Pressure
Solar Radiation
Storms

Visibility
Winds

Earth Radiative Processes

Albedo
Brightness Temperature
Heat Flux
Irradiance
Radiance

Solar Activity
Temperature
Thermal Inertia

Ocean Composition

Alkalinity
Aquatic Plants
Biomass
Carbon Dioxide
Chemical Tracers

Chlorophyll
Conductivity
Dissolved Solid
Light Transmission
Major Elements

Minor Species
Nitric Acid
Nitrogen
Nitrogen Dioxide
Ocean Wildlife

Organic Matter
Oxygen
pH
Phosphates
Phytoplankton

Pigment Concentration
Pollutants
Salinity
Sea Ice
Sediments

Silicate
Suspended Solids
Trace Elements
Tracers
Upwelling

Zooplankton

Ocean Dynamics

Bathymetry
Brigthness Temperature
Currents
Evaporation
Geopotential Height

Heat Flux
Pressure
Primary Production
Sea Ice
Sea Level
Sea Surface Height
Sedimentation
Swell
Temperature
Tides

Turbidity
Upwelling
Waves
Winds

Hydrologic Parameters

Contamination
Deposition
Erosion
Evaporation
Glaciers

Ground Water
Infiltration
Oxygen Demand
Precipitation
Rivers

Runoff
Sedimentation
Solids
Surface Water
Temperature

Turbidity
Water Vapor
Wetlands

Geological Parameters

Age Determinations
Coal
Economic Minerals
Geochemical Analysis
Igneous and Metomorphic Rocks

Lithology
Paleontology
Petroleum
Petrology
Sedimentary Rocks

Soils
Stratigraphy

Minor Species
Ocean Vegetation
Ocean Wildlife
Surface Vegetation

Geodynamic Features

Earthquakes
Erosion
Geodesy
Geothermal
Gravity Fields

Magnetic Fields
Polar Motion
Seismic
Structures
Terrain Elevation

Volcanoes

Geography and Land Cover

Albedo
Elevation
Fires
Glaciers
Ice

Lakes
Landforms
Pollen
Rivers
Snow

Soils
Surface Vegetation
Surface Water
Topographic Data
Wetlands

Biological Entities

Birds
Domesticated Plants
Endangered Species
Land Wildlife
Microorganisms

Appendix B

SOUTH-POLE: List of the KEYWORDS

B1 : DIF DISCIPLINES extracted from the SOUTH-POLE Directory

ASTRONOMY > INFRARED ASTRONOMY
ASTRONOMY > MICROWAVE ASTRONOMY
ASTRONOMY > RADIO ASTRONOMY

EARTH SCIENCE
EARTH SCIENCE > ATMOSPHERE
EARTH SCIENCE > INTERIOR AND CRUST
EARTH SCIENCE > LAND
EARTH SCIENCE > OCEAN

SPACE PHYSICS > IONOSPHERIC SCIENCE

B2 : DIF PARAMETERS extracted from the SOUTH-POLE Directory

ASTRONOMICAL PARAMETERS > PHOTOMETRY

ATMOSPHERIC COMPOSITION
ATMOSPHERIC COMPOSITION > AEROSOLS
ATMOSPHERIC COMPOSITION > CARBON DIOXIDE
ATMOSPHERIC COMPOSITION > CHLOROFLUOROCARBONS
ATMOSPHERIC COMPOSITION > CLOUDS

ATMOSPHERIC COMPOSITION > CONTAMINANTS
ATMOSPHERIC COMPOSITION > NITROGEN DIOXIDE
ATMOSPHERIC COMPOSITION > OZONE
ATMOSPHERIC COMPOSITION > TRACE ELEMENTS
ATMOSPHERIC COMPOSITION > TRACE GASES

ATMOSPHERIC DYNAMICS > ATMOSPHERIC TEMPERATURE
ATMOSPHERIC DYNAMICS > GEOPOTENTIAL HEIGHT
ATMOSPHERIC DYNAMICS > HUMIDITY
ATMOSPHERIC DYNAMICS > PRECIPITATION
ATMOSPHERIC DYNAMICS > PRESSURE

ATMOSPHERIC DYNAMICS > SOLAR RADIATION
ATMOSPHERIC DYNAMICS > WINDS

BIOLOGICAL ENTITIES
BIOLOGICAL ENTITIES > BIRDS
BIOLOGICAL ENTITIES > MICROORGANISMS
BIOLOGICAL ENTITIES > MINOR SPECIES
BIOLOGICAL ENTITIES > OCEAN VEGETATION

BIOLOGICAL ENTITIES > OCEAN WILDLIFE
BIOLOGICAL ENTITIES > SURFACE VEGETATION

CHARGED PARTICLES

EARTH RADIATIVE PROCESSES > ALBEDO
EARTH RADIATIVE PROCESSES > RADIANCE

GEODYNAMIC FEATURES > EARTHQUAKES
GEODYNAMIC FEATURES > GEOTHERMAL
GEODYNAMIC FEATURES > GRAVITY FIELDS
GEODYNAMIC FEATURES > MAGNETIC FIELDS
GEODYNAMIC FEATURES > SEISMIC

GEODYNAMIC FEATURES > STRUCTURES

GEODYNAMIC FEATURES > VOLCANOES

GEOGRAPHY AND LAND COVER
GEOGRAPHY AND LAND COVER > GLACIERS
GEOGRAPHY AND LAND COVER > ICE
GEOGRAPHY AND LAND COVER > LAKES
GEOGRAPHY AND LAND COVER > LANDFORMS

GEOGRAPHY AND LAND COVER > SNOW
GEOGRAPHY AND LAND COVER > SURFACE VEGETATION

GEOLOGICAL PARAMETERS > AGE DETERMINATIONS
GEOLOGICAL PARAMETERS > GEOCHEMICAL ANALYSIS
GEOLOGICAL PARAMETERS > PALEONTOLOGY
GEOLOGICAL PARAMETERS > PETROLOGY
GEOLOGICAL PARAMETERS > SEDIMENTARY ROCKS

GEOLOGICAL PARAMETERS > SOILS
GEOLOGICAL PARAMETERS > STRATIGRAPHY

HYDROLOGIC PARAMETERS
HYDROLOGIC PARAMETERS > CONTAMINATION
HYDROLOGIC PARAMETERS > GLACIERS
HYDROLOGIC PARAMETERS > GROUND WATER
HYDROLOGIC PARAMETERS > SEDIMENTATION

HYDROLOGIC PARAMETERS > SURFACE WATER

OCEAN COMPOSITION
OCEAN COMPOSITION > ALKALINITY
OCEAN COMPOSITION > BIOMASS
OCEAN COMPOSITION > CHEMICAL TRACERS
OCEAN COMPOSITION > CHLOROPHYLL

OCEAN COMPOSITION > CONDUCTIVITY
OCEAN COMPOSITION > MAJOR ELEMENTS
OCEAN COMPOSITION > MINOR SPECIES
OCEAN COMPOSITION > NITROGEN
OCEAN COMPOSITION > ORGANIC MATTER

OCEAN COMPOSITION > OXYGEN
OCEAN COMPOSITION > PH
OCEAN COMPOSITION > PHYTOPLANKTON
OCEAN COMPOSITION > PIGMENT CONCENTRATION
OCEAN COMPOSITION > POLLUTANTS

OCEAN COMPOSITION > SALINITY
OCEAN COMPOSITION > SEDIMENTS
OCEAN COMPOSITION > TRACE ELEMENTS
OCEAN COMPOSITION > ZOOPLANKTON

OCEAN DYNAMICS > PRESSURE
OCEAN DYNAMICS > SEDIMENTATION
OCEAN DYNAMICS > TEMPERATURE
OCEAN DYNAMICS > UPWELLING

RADIANCE AND IMAGERY
RADIANCE AND IMAGERY > INFRARED
RADIANCE AND IMAGERY > MICROWAVE
RADIANCE AND IMAGERY > RADIO WAVE
RADIANCE AND IMAGERY > ULTRAVIOLET

RADIANCE AND IMAGERY > VISIBLE

B3 : GENERAL-KEYWORDS extracted from the SOUTH-POLE Directory

ADAMUSSIUM COLBECKI
ADAPTATION
ADELIE COVE
AERONOMY
AEROSOLS

ALBEDO
ALGAL MATSBIOMASS
ALGOLOGY
ALIMENTARY CHAIN
ALIPHATIC HYDROCARBONS

ALKALINE METALS
AMUNDSEN SCOTT BASE
AMUNDSEN SEA
ANALYTICAL CHEMISTRY
ANEMOMETRY

ANODIC STRIPPING VOLTAMMETRY
ANPHIPODI
ANTARCTICA PROPOSAL RECORDS
APATITE
AQUATIC BOTANY

AROMATIC HYDROCARBONS
ARTIFICIAL RADIONUCLEIDES
ASTROPHYSICS
ATMOSPHERE
ATMOSPHERIC PHYSICS

ATMOSPHERIC TEMP. EMISSION
ATMOSPHERIC TURBIDITY
ATP
ATRIAL NATRIURETIC PAPTIDES
AUTORADIOGRAPHY

BACTERIA
BACTERIAL STOCKS
BACTERIOLOGY
BAKER ROCKS
BAKER ROCKS LAKE

BALLENY ISLANDS
BASIC ECOLOGY
BEACON VALLEY
BELLINGSHAUSEN SEA
BENTHONIC COMMUNITIES

BENTHONIC ORGANISMS
BENTHOS
BIOCHEMICAL PROPERTIES
BIOCHEMISTRY
BIOCLIMATOLOGY

BIOGEOGRAPHY
BIOLOGICAL OCEANOGRAPHY
BIOLOGY
BIOMASS
BIOMETRICS

BIOTOPES
BIRDS
BISMUTH 214
BOOMERANG GLACIER
BOTANY

BOUNDARY LAYER
BROAD BAND SEISMOLOGY
BRYOZOA

C14 ASSIMILATION
CADMIUM
CAESIUM 137
CALCIUM
CAMPBELL GLACIER

CAPE SASTRUGI
CARBON CYCLE
CARBON DIOXIDE
CARBON MONOXIDE
CAREZZA LAKE

CAREZZA LAKE 3
CATABATIC WIND
CENOZOICS
CENTRAL VICTORIA LAND
CHEMICAL ANALYSIS

CHEMICAL METHODOLOGY
CHEMICAL MOBILITY
CHEMICAL OCEANOGRAPHY
CHEMISTRY
CHLORAGE

CHLORINATED HYDROCARBONS
CHLOROFICEE
CHLOROFLUOROCARBONS
CIANOBACTERIA
CIRCULATION

CLIMATIC CHANGE
CLIMATOLOGY
CLONE DUPLICATION
CLOUD COVERAGE
CLOUD PHYSICS

COBALT
COLD ADAPTATION
COMMUNITY
COMPARATIVE CARDIOLOGY
COMPARATIVE MORPHOLOGY

COMPARATIVE PHYSIOLOGY
CONDENSATION NUCLEI
CONDUCTIVITY
COPEPODS
COPPER

CORROSION CURRENTS
CORROSION POTENTIALS
COSMOLOGY
COULMAN ISLAND
CRATER CIRQUE LAKES

CROZET ISLAND
CRUST
CRUSTACEANS
CRYPTOGAM RIDGE
CRYSTALLINE ROCKS

CRYSTALLOGRAPHY
CYTOCHEMISTRY
CYTOFLUORIMETRY
CYTOGENETICS
CYTOLOGY

DANIELL PENINSULA
DECEPTION ISLAND
DEEP WATER
DEGRADATION
DEPTH MORPHOLOGY

DERMATOPHYTES
DERMATOPHYTOSIS
DESSENT UNIT
DETOXICATYING ENZYMATIC ACTIV.
DISSOLVED NUTRIENTS

DISSOLVED OXYGEN
DRY VALLEYS
DRYGALSKY BASIN
DUMONT D'URVILLE
EARTH ENVIRONMENT

EARTH SCIENCE
ECOLOGY
EDMONSON POINT
EDMONSON POINT LAKE 14
EDMONSON POINT LAKE 15

EDMONSON POINT LAKE 16
ELECTROCHEMICAL PROCESSES
ELECTROLYTES
ELECTRON DENSITY
ELEMENT CONCENTRATION

ENEIDE POOL LAKE 1
ENIGMA LAKE
ENVIRONMENT
ENVIRONMENTAL IMPACT
ENVIRONMENTAL PARAMETERS

ENZYMATIC ACTIVITIES
ENZYMATIC POLYMORPHISMS
ENZYME
ENZYMOLOGY
EOLIAN DUSTS

EPONTIC ALGAE
EQUILIBRIA IN SOLUTION
EUPHAUSIIDS
EVOLUTION
EVOLUTIONARY CYTOGENETICS

FAUNISTICS
FEATHERS
FISHES
FISSION TRACKS
FLORA

FLUIDS
FLUORESCENCE
FLUORUM
FORAMINIFERA
FOULING

FRESH WATER
FRESH WATER ALGAE
FUNGI

GAMMA ANALYSIS
GENE EXPRESSION
GENE HEAT SHOCK
GENETIC
GENETIC ADAPTATION MECHANISMS

GEOCHEMISTRY
GEOCHRONOLOGY
GEODYNAMICS
GEOGRAPHICAL DISTRIBUTION
GEOLOGICAL MAPPING

GEOLOGICAL SCIENCES
GEOLOGICAL SURVEY
GEOLOGY
GEOMAGNETISM
GEOMORPHOLOGY

GEOPHYSICS
GEOPOTENTIAL HEIGTH
GEOTECTONICS
GERLACHE INLET
GERLACHE MOUNTAIN

GLACIOLOGY
GLOBAL AIR POLLUTION
GONDWANA LAKE 17
GRANITE HARBOUR INTRUSIVES
GRANITOIDS

GRAVIMETRY
GRAVITY
GROUND WATER PHYTOPLANKTON

HEART
HEAT FLOW
HEAVY METALS
HEMOGLOBIN
HETEROCOMPOUNDS

HIGH RESOLUTION SEISMICS
HOMOTHALLISM
HUMAN EFFECT
HUMIDITY

HYDROCHEMISTRY

HYDROGEN
HYDROLOGY

ICARO CAMP
ICE
ICE CORES
ICE CRYSTALS
ICEFISHES

ICHTYOLOGY
IMAGE PROCESSING
IMMUNOFLUORESCENCE
INEXPRESSIBLE ISLAND
INEXPRESSIBLE ISLAND LAKE 10a

INEXPRESSIBLE ISLAND LAKE 10b
INEXPRESSIBLE ISLAND LAKE 9
INTERSTELLAR DUST
INTERSTITIAL WATERS
IONOSPHERE

IONOSPHERIC CHARACTERISTICS
IRRADIANCE
ISOTOPICAL ANALYSIS

KARIOTYPE
KATABATIC WINDS
KAY ISLAND FOOTHILLS
KERGUELEN ISLAND

LAKE SEDIMENTS
LAKE VEGETABLES
LAKES
LARVAL CRUSTACEAN DECAPODS
LATE PALEOZOIC

LEAD
LIDAR
LIGANDS
LIMNOLOGY
LITHIUM

LOCAL SEISMIC EVENTS
LONG PERIOD SEISMOLOGY
LOW TEMPERATURE ADAPTATION

LPS

MAGELLANIC CLOUDS
MAGELLANIC STRAIT
MAGNESIUM
MAGNETIC COMPONENTS
MAGNETIC MAPPING

MAGNETIC SURVEY
MAGNETIC TRACERS
MAGNETO VARIATION ANALYSIS
MAJOR ELEMENTS
MALTA PLATEAU

MANTLE EVOLUTION
MARINE BENTHOS
MARINE CORROSION
MARINE ENVIRONMENT
MARINE GEOLOGY

MARINE GEOPHYSICAL PROFILES
MARINE GEOPHYSICS
MARINE GLACIER AREA
MARINE GRAVITY
MARINE METEOROLOGY

MARINE MICROBIOLOGY
MARINE MICROORGANISMS
MARINE ORGANISMS
MARINE SEDIMENTS
MARINE TOTAL MAGNETIC FIELD

MARINE VIBRIONES
MARKHAM ISLAND
MCMURDO SOUND
MCMURDO STATION
MEDICAL MICROBIOLOGY

MERCURY
METABOLISM
METAL CIRCULATION
METAL PROTECTION
METALLOTIONEINE

METEOROLOGY
METEREOLOGICAL RANGE
MICROALGAELIC CULTURE
MICROBIAL ECOLOGY
MICROBIAL INDUCED CORROSION

MICROBIOLOGY
MICROFUNGI
MICROPROBE ANALYSIS
MINERAL FRACTION
MINERALOGY

MINING SCIENCE
MINOR ELEMENTS
MIXED FUNCTION OXIDASES
MODAL ANALYSIS
MOLECULAR BIOLOGY

MOLECULAR SPECTROGRAPHY
MOLLUSCA
MORPHOPHYSIOLOGY
MORPHPLOGYCAL PROPERTIES
MOUNT MELBOURNE

MOUNT OVERLORD
MOUNT RITTMANN
MULTISPECTRAL ANALYSIS
MUSSES
MYCOFLORA

MYCOLOGY

NANSEN ICE SHEET
NATURAL ELEMENTS
NATURAL RADIONUCLEIDES
NEKTON
NEUROTRASMITTERS

NITROGEN
NORTH EDMONDSON POINT
NORTH SEA CHANNEL
NORTH VICTORIA LAND
NOTOTHENIOIDS

NUTRIENTS

OCEANIC COMPOUNDS
OCEANOGRAPHY
OPTICAL DEPTH
OPTICAL THICKNESS
ORGANIC COMPOUNDS

OSMOREGULATION

OSTRACODA
OXYGEN
OZONE
OZONE DEPLETION

PACIFIC SECTOR
PACK ICE
PAH
PALEOCLIMATOLOGY
PALEOECOLOGY

PALEOENVIRONMENTS
PALEOMAGNETISM
PALYNOLOGY
PARTICULATE MATTER
PASSIVE SHOOTING

PCB
PECULIAR BIOTOPES
PENGUIN BAY
PESTICIDES
PETREL DUNG

PETROGRAPHY
PETROLOGY
PH
PHOTOMETRY
PHOTOSYNTETIC PICOPLANKTON

PHYSICAL OCEANOGRAPHY
PHYSICS
PHYSIOLOGY
PHYTOPLANKTON
PHYTOTAXONOMY

PICOPHITOPLANKTON
PICOPLANKTON
PLACIOLOGY
PLANKTOLOGY
PLANKTON

POLAR CLOUDS
POLAR OZONE
POLLEN SAMPLES
POLLUTANTS
POLLUTION

POLYCHAETA
POTASSIUM

POTASSIUM 40
PRECIPITATIONS
PRESSURE

PRIESLEY NEVE'
PRIMARY PRODUCTION
PRIOR ISLAND
PRODUCTIVITY
PROTEINS

PROTOZOA
PYCNOGONIDS

RADIOACTIVE TRACERS
RADIOACTIVITY
RADIOCHEMISTRY
RADIOECOLOGY
RADIOISOTOPES

RADIOMETER
RADIONUCLEIDES
RADIOWAVE PROPAGATION
RECENT SEDIMENTATION
REFLECTION SEISMIC

REFLECTION SEISMIC PROFILING
REFLECTION SHOOTING PROFILING
REMOTE SENSING
RESPIRATORY PROTEINS
ROCKS ANALYSIS

ROCKS MAGNETISM
ROSS ISLAND
ROSS SEA
ROSS SEA LAKE
ROSS SEA SEDIMENTS

SANDSTONES
SCOTIA ARC
SCOTIA SEA
SCOTIA SEA BORDER
SEA ENVIRONMENTAL IMPACT

SEA SPECIES
SEA SURFACE TEMPERATURE
SEA WATER
SEDIMENT
SEDIMENT CORING

SEDIMENTARY
SEDIMENTARY ROCKS
SEDIMENTATION
SEDIMENTOLOGY
SEDIMENTS

SEISMIC EVENTS
SEISMIC EXPLORATION
SEISMIC SOURCE STUDIES
SEISMIC SURVEY
SEISMOLOGY

SELENIUM
SERUM PROTEINS
SILT PONDS
SKUA LAKE 2
SKY TEMPERATURE

SNOW
SNOW CHEMISTRY
SNOW DATING
SO4
SODAR

SODIUM
SOIL
SOLAR RADIATION
SOLID EARTH
SOUTH EDMONDSON POINT

SOUTH ORKNEY ISLANDS
SOUTH PACIFIC OCEAN
SOUTH SHETLANDS
SOUTH WEST PACIFIC OCEAN
SPACE DISTRIBUTION

SPECIATION MECHANISMS
SPECTRA
SPECTROCHEMISTRY
STABLE ELEMENTS
STRAND LINE GLACIER

STRATIGRAPHY
STRATOSPHERE
STRATOSPHERE CHEMISTRY
STRATOSPHERIC POLAR CLOUDS
STRONTIUM

STRUCTURAL GEOLOGY

SUBMILLIMETER ASTRONOMY
SURFACE REFLECTIVITY
SURFACES
SUTURE ZONE

SYSTEM. ALGAE ASSOCIATE MUSKS
SYSTEMATIC MYCOLOGY

TARN FLAT LAKE 20
TARN FLAT LAKE 21
TEALL NUNATAK
TECTONICS
TELESEISMS

TELLURIUM 208
TEMPERATURE
TERRA NOVA BAY
TERRA NOVA BAY INLAND
TERRESTRIAL BIOTOPES

TERRESTRIAL MAGNETISM
TERROR RIFT
TETHYS BAY
THELEBOLUS MICROSPORUS
THERMAL STRUCTURE

THERMOPHILE
THORIUM 232
TIME DISTRIBUTION
TOTAL ALKALINITY
TRACE ELEMENTS

TRACE METALS
TRANSANTARCTIC MOUNTAINS
TROPHIC LEVELS
TROPOSPHERE
TROPOSPHERIC CHEMISTRY

TUCKER GLACIER
TVC GRAVIMETRIC RELIEF
TVC ROCKS MAGNETIZATION
TVC TERRESTRIAL MAGNETIC FIELD

ULTRATRACE METALS
UNIVERSITY VALLEY
UPWELLING
URANIUM 238
USEFUL FREQUENCY SPECTRUM

Appendix C

SOUTH-POLE: List of the SENSORS

C1 : **SENSOR-NAMES extracted from the SOUTH-POLE Directory**
(ordered by LONG_NAME)

24 BIT A/D CONVERTER AND DATA LOGGER, QUANTAGRATOR	ADCODL1
ADVANCED VERY HIGH RESOLUTION RADIOMETER	AVHRR
AIRBORNE PARTICLE MONITOR	APM
ALCOHOL BASED PARTICLE COUNTER, TSI 3020	PCNT1
ALPHA SPECTROMETER	ALPHAS
ALTIMETER	ALT
ALTIMETER, CSSP11	ALT1
AMINO ACID SEQUENCER	AMACSEQ
ANALOGIC STREAMER, PRAKLA	ASTR1
ANEMOMETERS THERMISTORS	ANEMT
ATOMIC ABSORPTION SPECTROMETER	AASM
ATOMIC ABSORPTION SPECTROMETER, COLD VAPORS	CVAAS
ATOMIC ABSORPTION SPECTROMETER, GRAPHITE FURNACE	GFAAS
ATOMIC ABSORPTION SPECTROMETER, HYDRIDE GENERATION	HGAAS
ATOMIC ABSORPTION SPECTROPHOTOMETER	AASPH
ATOMIC ABSORPTION SPECTROPHOTOMETER, GRAPHITE FURNACE	GFAASPH
ATOMIC EMISSION SPECTROMETER	AES
AUTOANALYZER	AAN
AUTOANALYZER, TECHNICOM II	AAN1
AXIOPLAN EPIFLUORESCENCE, ZEISS	AXEPIF1
BLOOD FLOWMETER	BFW
CALIBRATION SYSTEM USING PERMEATION TUBES	PTB
CARBON HYDROGEN NITROGEN ANALYZER	CHNAN
CASSETTE INTERFACE, CAMPBELL C20	IF1
CATHODIC STRIPPING VOLTAMMETER	CSV
CHARGED COUPLED DEVICE, AEROSOL BALLOON BORNE IMAGING	CCDBB
CHART RECORDER	REC
CHROMATOGRAPH SPECTROM., FT-IR GAS INTERF. (PROTOT.)	FTIRCS
CO2 ANALYZER, ASTRO 2001	CO2AN1
COMPASS	CMP
CONDUCTIVITY, TEMPERATURE, DEPTH	CTD
COULTER COUNTER	CCNT
COULTER COUNTER, MULTISIZER	MSCCNT
CRYOSTATE	CRY
CYTOCHEMICAL RESEARCH INSTRUMENTS	CYT
DIFFERENTIAL ABSORPTION LIDAR	DIAL
DREDGE SYSTEM	DRG
ECHOGRAPHIC RECEIVER	ECHORCV
ELASTIC BACKSCATTERING LASER RADAR SYSTEM	EBSLR
ELECTROMETER	EM
ELECTRON CAPTURE DETECTOR	ECDTC
ELECTRON MICROPROBE	EMPB
ELECTRON MICROPROBE, SEM-EDS WLD	EMPB1
ELECTRON MICROSCOPE, SCANNING	SEMSC
ELECTRON MICROSCOPE, TRANSMISSION	TEMSC
ELECTROPHORESIS ULTRACENTRIFUGE MACHINE	EPUCF
ELECTROPHORESIS, SARTOPHOR SYSTEM	EPSS
ENZIMATIC ASSAY	EA
EPIFLUORESCENCE DETECTOR	EPIFLDTC
EPIFLUORESCENT MICROSCOPE	EPIFLMSC
FLAME IONIZATION DETECTOR	IDTC
FLASH PHOTOLYSIS ANALYZER	PHLAN

FLOW CYTOMETER	FCY
FLUORESCENCE SPECTROPHOTOMETER	FLSPH
FLUOROMETER	FL
FLUX CENTRIFUGE, BECKMAN	FCF1
FREEZE DRYER	FRDR
GAMMA SPECTROMETER	GAMMAS
GAS CHROMATOGRAPH	GC
GAS CHROMATOGRAPH, CARLO ERBA MEGA 5160	GC1
GAS CHROMATOGRAPH, PERKIN ELMER SIGMA 3B	GC2
GAS CHROMATOGRAPH, TITROPROCESSOR	TGC
GAS LIQUID CHROMATOGRAPH	GLC
GEOMAGNETIC VARIOGRAPH, ASKANIA GV3	GMVG1
GEOTHERMAL HEAT FLOW PROBE, ARGUS II (VERSION 1990)	GTHFPB1
GRAB MACHINE	GBM
GRAB MACHINE ECKMAN	GBM1
GRAB MACHINE PETERSEN	GBM2
GRAB MACHINE VAN VEEN	GBM3
GRAVIMETER	GV
GRAVIMETER BODENSEEWERK, KSS30	BGV1
GRAVIMETER BODENSEEWERK, KSS31	BGV2
GRAVIMETER, LA COSTE ROMBERG G927	GV1
GRAVIMETER, SYMMETRICAL FREE MOTION	SFMGV
GRAVITY CORER	GVCR
HE3 BOLOMETERS	HE3B
HEART PERFUSION APPARATUS	HPA
HIGH RESOLUTION VISIBLE RADIOMETER	HRYR
HIGH VOL. AIR FILTRATION MULTISTADIAL IMPACTOR (ISO)	MSDIMP
IMAGE ANALYZER SYSTEM	IMAN
INDUCTIVELY COUPLED PLASMA	ICP
INERTIAL SPECTROMETER	IS
INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS	NAAN
INSTRUMENTATION LABORATORY, IL 740 CARBONROD	ILAB2
INSTRUMENTATION LABORATORY, IL S19	ILAB1
INSTRUMENTATION LABORATORY, SALINOMETER	ILAB3
INTRINSIC GERMANIUM DETECTOR	GEDTC
INVERTED MICROSCOPE	IMSC
ION CHROMATOGRAPH	IC
ION CHROMATOGRAPH, DIONEX 4000	IC1
ION TRAP DETECTOR	ITDTC
ISOLATION OF FUNGI IN CULTURE	CULT
LASER MICROSCOPE, SCANNING	LMSC
LEAD CHESTED DETECTOR, GELI PGT	LCDTC1
LIGHT DETECTION AND RANGING	LIDAR
LIQUID CHROMATOGRAPH, FAST PROTEIN	FPLC
LIQUID CHROMATOGRAPH, HIGH PERFORMANCE	HPLC
LIQUID CHROMATOGRAPH, PERKIN ELMER 410	LC1
LIQUID SCINTILLATION COUNTER	LSCNT
LITTLE CORER AND HATCHET	CRHA
LUMINESCENCE SPECTROMETER, PERKIN ELMER LS-5	LS1
LYOPHILIZATOR	LYO
MAGNETIC SUSCEPTIBILITY SYSTEM, BARTINGTON MS2	MGS1
MAGNETIC SUSCEPTIBILITY SYSTEM, KT5	MGS3
MAGNETIC SUSCEPTIBILITY SYSTEM, SCINTREX SM5	MGS2
MAGNETOMETER	MAG
MAGNETOMETER DECLINATION AND INCLINATION, EDA DIM 100	DIMG1
MAGNETOMETER FLUXGATE, EDA FM 100B	FMG1
MAGNETOMETER GEOMETRICS, G801-803	GMG1
MAGNETOMETER GEOMETRICS, G811	GMG2

MAGNETOMETER THEODOLITE, SOKKISHA GSI	TMG1
MAGNETOMETER, FLUXGATE TRHEE COMPONENTS	FMG
MAGNETOMETER, NUCLEAR PRECESSION	NPMG
MASS SPECTROMETER	MS
MASS SPECTROMETER, HIGH RESOLUTION	HRMS
METROHM 665 DOSIMAT	OHM1
METROHM 670 TITROPROCESSOR	OHM2
MICROLOGGER, CAMPBELL 21X	ML1
MICROPHOTOG APPARTUS, ZEISS C35	MPG1
MICROSCOPE	MSC
MICROSCOPE FOR SPECIES IDENTIFICATION	IDMSC
MICROSCOPE FOR SPECIMENS ANALYSIS	AMSC
MICROSCOPE, GANDOLFI CAMERA	GCMSC
MICROSCOPE, PETROGRAPHYCAL	PMSC
MICROSCOPE, STEREO	SMSC
MICROSCOPE, ZEISS STANDARD JUNIOR	MSC1
MICROSCOPE, ZEISS STANDARD KK0422/2	MSC2
MICROTRAC, LEED AND NORTHRUP	MTC1
MULTI SPECTRAL SCANNER	MSS
MULTICHANNEL SEISMIC RECORDER, REFLECTION DATA	MSMREC
MULTICHANNEL SEISMIC RECORDER, SERCEL 358	MSMREC1
MULTIWAVELENGTH SUN PHOTOMETER, 0.3-1.1 MICRO-M	MWPH1
NAVIGATION SYSTEM, GPS OMEGA MAGNAVOX	NAV1
NAVIGATION SYSTEM, NAVDATA 3000	NAV2
NOX ANALIZER, DASIBI 2108	NOXAN1
O3 ANALYZER, DASIBI 1003	O3AN1
OBLIQUE IONOSPHERIC SOUNDING IMPULSIVE 2ND TRANSMITTER	OSITRA
OBLIQUE SOUNDING RECEIVER	OSRCV
PHMETER	PHM
PHOTOGRAPHIC APPARATUS	PG
PHOTOGRAPHIC APPARATUS, ZEISS M35	PG1
PHOTOMETER	PHOT
PHOTON SPECTROMETER, LOW ENERGY	LEPHS
PLASMA SPECTROMETER	PS
POLAROGRAPHIC ANALYSER	POLGAN
POLAROGRAPHIC ANALYZER, PAR/174	POLGAN1
POLIMERASE CHAIN REACTION THERMAL CYCLE	PMCR
PORTABLE COMPUTER, COMPAQ P3	PC1
POTENTIOMETRIC TITRATIONS	POTTRA
POTENZIOSTAT	PTS
PRESSURE TRANSDUCER	PTRD
PROTON MAGNETOMETER, ELSEC 770 PPM	PMG3
PROTON MAGNETOMETER, GEOMETRICS G856	PMG2
PROTON MAGNETOMETER, SCINTREX MP3	PMG1
RADIO SOUNDING PROBE, BARRY RESEARCH IONOSPHERIC	RSP1
RADIO SOUNDING RADIOMETER	RSR
RADIOMETER, 2.5 GHZ	RD2
RADIOMETER, 820 MHZ	RD1
RADIOMETER, ESOTECA 1000A (MSS)	RD3
REDUCED GAS DETECTOR	RGDTC
SAMPLER, HIGH VOLUME	HVSMP
SAMPLER, NISKIN	SMP1
SEISMIC RECORDER, SN358DMX	SMREC1
SEISMIC SENSOR, BB13	SMS2
SEISMIC SENSOR, S13	SMS1
SIMULTANEOUS THERMAL ANALYZER	THAN

SINGLE CHANNEL STREAMER, SPARKER 16KJ-200MT	SCST1
SOLAR RADIATION ANALYZER, CM 5	SRDAN1
SONOBUOYS	SNDB
SOUND DETECTION AND RANGING	SODAR
SPECIES IDENTIFICATION HANDBOOK	HBK
SPECTROFLUORIMETER	SFL
SPECTROMETER, FT-IR NICOLET 740	FTIRS1
SPECTROPHOTOMETER	SPH
SPECTROPHOTOMETER, BECKMAN TRACE III	SPH1
SPECTROPHOTOMETER, VARIAN CARY 3	SPH2
SPIRAL SYSTEM	SPR
STEREOSCOPE, ZEISS STEMI DV4	STSC1
STEREOSCOPE, ZEISS STEMI SR	STSC2
STERILE INSTRUMENTS FOR SAMPLING	STI
STERILE MATERIALS FOR ISOLATION	STM
STOPPED FLOW	STPFL
SUPERCRITICAL FLUID CHROMATOGRAPH	SFC
SUPERCRITICAL FLUID EXTRACTION	SFEX
TACHEOMETER	TACH
THEMATIC MAPPER	TM
THERMOMETER	TH
THIN MERCURY FILM ROTATING DISK GLASSY CARBON ELECTRODE	MFCE
TIME RESOLVED SURFACE VISCOELASTOMETER	SVIEL
ULTRACENTRIFUGE	UCF
UNDERWATER QUANTAMETER	UWQU
UNDERWATER SPECTRORADIOMETER	UWSR
UV/VIS SPECTROMETER	UVVISS
VACUUM ELECTROBALANCE	VACEB
VACUUM VIALS GLASS BOTTLES	VACBOT
VERY-BROAD BAND SEISMIC SENSORS	BBSMS
VIDEO CAMERA	TVCAM
VIDEO CAMERA, REMOTELY OPERATED	ROTVC
VLF PORTABLE TRANSMITTER, GEONICS TX 27	VLFTRA1
VLF-EM AND RESISTIVITY METER, GEONICS EM 16+16R	VLFEMR1
WATER SAMPLER ANALYZER, ACQUA ME-ROSETTE	WAN1
X RAY DIFFRACTOMETER	XRDFC
X RAY FLUORESCENCE SPECTROMETER	XRFLS
X RAY FLUORESCENCE SPECTROMETER, PHILIPS PW14-80	XRFLS1
X RAY FLUORESCENCE SPECTROMETER, TOTAL REFLECTION	TRXRFLS

C2 : SENSOR-NAMES extracted from the SOUTH-POLE Directory

(ordered by SHORT_NAME)

AAN	AUTOANALYZER
AAN1	AUTOANALYZER, TECHNICOM II
AASM	ATOMIC ABSORPTION SPECTROMETER
AASPH	ATOMIC ABSORPTION SPECTROPHOTOMETER
ADCODL1	24 BIT A/D CONVERTER AND DATA LOGGER, QUANTAGRATOR
AES	ATOMIC EMISSION SPECTROMETER
ALPHAS	ALPHA SPECTROMETER
ALT	ALTIMETER
ALT1	ALTIMETER, CSSP11
AMACSEQ	AMINO ACID SEQUENCER
AMSC	MICROSCOPE FOR SPECIMENS ANALYSIS
ANEMT	ANEMOMETERS THERMISTORS
APM	AIRBORNE PARTICLE MONITOR
ASTR1	ANALOGIC STREAMER, PRAKLA
AVHRR	ADVANCED VERY HIGH RESOLUTION RADIOMETER
AXEPIF1	AXIOPLAN EPIFLUORESCENCE, ZEISS
BBSMS	VERY-BROAD BAND SEISMIC SENSORS
BFW	BLOOD FLOWMETER
BGV1	GRAVIMETER BODENSEEWERK, KSS30
BGV2	GRAVIMETER BODENSEEWERK, KSS31
CCDBB	CHARGED COUPLED DEVICE, AEROSOL BALLOON BORNE IMAGING
CCNT	COULTER COUNTER
CHNAN	CARBON HYDROGEN NITROGEN ANALYZER
CMP	COMPASS
CO2AN1	CO2 ANALYZER, ASTRO 2001
CRHA	LITTLE CORER AND HATCHET
CRY	CRYOSTATE
CSV	CATHODIC STRIPPING VOLTAMMETER
CTD	CONDUCTIVITY, TEMPERATURE, DEPTH
CULT	ISOLATION OF FUNGI IN CULTURE
CVAAS	ATOMIC ABSORPTION SPECTROMETER, COLD VAPORS
CYT	CYTOCHEMICAL RESEARCH INSTRUMENTS
DIAL	DIFFERENTIAL ABSORPTION LIDAR
DIMG1	MAGNETOMETER DECLINATION AND INCLINATION, EDA DIM 100
DRG	DREDGE SYSTEM
EA	ENZIMATIC ASSAY
EBSLR	ELASTIC BACKSCATTERING LASER RADAR SYSTEM
ECDTC	ELECTRON CAPTURE DETECTOR
ECHORCV	ECHOGRAPHIC RECEIVER
EM	ELECTROMETER
EMPB	ELECTRON MICROPROBE
EMPB1	ELECTRON MICROPROBE, SEM-EDS WLD
EPIFLDTC	EPIFLUORESCENCE DETECTOR
EPIFLMSC	EPIFLUORESCENT MICROSCOPE
EPSS	ELECTROPHORESIS, SARTOPHOR SYSTEM
EPUCF	ELECTROPHORESIS ULTRACENTRIFUGE MACHINE
FCF1	FLUX CENTRIFUGE, BECKMAN
FCY	FLOW CYTOMETER
FL	FLUOROMETER
FLSPH	FLUORESCENCE SPECTROPHOTOMETER
FMG	MAGNETOMETER, FLUXGATE TRHEE COMPONENTS
FMG1	MAGNETOMETER FLUXGATE, EDA FM 100B

FPLC	LIQUID CHROMATOGRAPH, FAST PROTEIN
FRDR	FREEZE DRYER
FTIRCS	CHROMATOGRAPH SPECTROM., FT-IR GAS INTERF. (PROTOT.)
FTIRS1	SPECTROMETER, FT-IR NICOLET 740
GAMMAS	GAMMA SPECTROMETER
GBM	GRAB MACHINE
GBM1	GRAB MACHINE ECKMAN
GBM2	GRAB MACHINE PETERSEN
GBM3	GRAB MACHINE VAN VEEN
GC	GAS CHROMATOGRAPH
GC1	GAS CHROMATOGRAPH, CARLO ERBA MEGA 5160
GC2	GAS CHROMATOGRAPH, PERKIN ELMER SIGMA 3B
GCMSC	MICROSCOPE, GANDOLFI CAMERA
GEDTC	INTRINSIC GERMANIUM DETECTOR
GFAAS	ATOMIC ABSORPTION SPECTROMETER, GRAPHITE FURNACE
GFAASPH	ATOMIC ABSORPTION SPECTROPHOTOMETER, GRAPHITE FURNACE
GLC	GAS LIQUID CHROMATOGRAPH
GMG1	MAGNETOMETER GEOMETRICS, G801-803
GMG2	MAGNETOMETER GEOMETRICS, G811
GMVG1	GEOMAGNETIC VARIOGRAPH, ASKANIA GV3
GTHFPB1	GEOTHERMAL HEAT FLOW PROBE, ARGUS II (VERSION 1990)
GV	GRAVIMETER
GV1	GRAVIMETER, LA COSTE ROMBERG G927
GVCR	GRAVITY CORER
HBK	SPECIES IDENTIFICATION HANDBOOK
HE3B	HE3 BOLOMETERS
HGAAS	ATOMIC ABSORPTION SPECTROMETER, HYDRIDE GENERATION
HPA	HEART PERFUSION APPARATUS
HPLC	LIQUID CHROMATOGRAPH, HIGH PERFORMANCE
HRMS	MASS SPECTROMETER, HIGH RESOLUTION
HRYR	HIGH RESOLUTION VISIBLE RADIOMETER
HVSMP	SAMPLER, HIGH VOLUME
IC	ION CHROMATOGRAPH
IC1	ION CHROMATOGRAPH, DIONEX 4000
ICP	INDUCTIVELY COUPLED PLASMA
IDMSC	MICROSCOPE FOR SPECIES IDENTIFICATION
IDTC	FLAME IONIZATION DETECTOR
IF1	CASSETTE INTERFACE, CAMPBELL C20
ILAB1	INSTRUMENTATION LABORATORY, IL S19
ILAB2	INSTRUMENTATION LABORATORY, IL 740 CARBONROD
ILAB3	INSTRUMENTATION LABORATORY, SALINOMETER
IMAN	IMAGE ANALYZER SYSTEM
IMSC	INVERTED MICROSCOPE
IS	INERTIAL SPECTROMETER
ITDTC	ION TRAP DETECTOR
LC1	LIQUID CHROMATOGRAPH, PERKIN ELMER 410
LCDTC1	LEAD CHESTED DETECTOR, GELI PGT
LEPHS	PHOTON SPECTROMETER, LOW ENERGY
LIDAR	LIGHT DETECTION AND RANGING
LMSC	LASER MICROSCOPE, SCANNING
LS1	LUMINESCENCE SPECTROMETER, PERKIN ELMER LS-5
LSCNT	LIQUID SCINTILLATION COUNTER
LYO	LYOPHILIZATOR
MAG	MAGNETOMETER
MFCE	THIN MERCURY FILM ROTATING DISK GLASSY CARBON ELECTRODE
MGS1	MAGNETIC SUSCEPTIBILITY SYSTEM, BARTINGTON MS2
MGS2	MAGNETIC SUSCEPTIBILITY SYSTEM, SCINTREX SM5
MGS3	MAGNETIC SUSCEPTIBILITY SYSTEM, KT5

ML1	MICROLOGGER, CAMPBELL 21X
MPG1	MICROPHOTOG APPARTUS, ZEISS C35
MS	MASS SPECTROMETER
MSC	MICROSCOPE
MSC1	MICROSCOPE, ZEISS STANDARD JUNIOR
MSC2	MICROSCOPE, ZEISS STANDARD KK0422/2
MSCCNT	COULTER COUNTER, MULTISIZER
MSDIMP	HIGH VOL. AIR FILTRATION MULTISTADIAL IMPACTOR (ISO)
MSMREC	MULTICHANNEL SEISMIC RECORDER, REFLECTION DATA
MSMREC1	MULTICHANNEL SEISMIC RECORDER, SERCEL 358
MSS	MULTI SPECTRAL SCANNER
MTC1	MICROTRAC, LEED AND NORTHRUP
MWPH1	MULTIWAVELENGTH SUN PHOTOMETER, 0.3-1.1 MICRO-M
NAAN	INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS
NAV1	NAVIGATION SYSTEM, GPS OMEGA MAGNAVOX
NAV2	NAVIGATION SYSTEM, NAVDATA 3000
NOXAN1	NOX ANALIZER, DASIBI 2108
NPMG	MAGNETOMETER, NUCLEAR PRECESSION
O3AN1	O3 ANALYZER, DASIBI 1003
OHM1	METROHM 665 DOSIMAT
OHM2	METROHM 670 TITROPROCESSOR
OSITRA	OBLIQUE IONOSPHERIC SOUNDING IMPULSIVE 2ND TRANSMITTER
OSRCV	OBLIQUE SOUNDING RECEIVER
PC1	PORTABLE COMPUTER, COMPAQ P3
PCNT1	ALCOHOL BASED PARTICLE COUNTER, TSI 3020
PG	PHOTOGRAPHIC APPARATUS
PG1	PHOTOGRAPHIC APPARATUS, ZEISS M35
PHLAN	FLASH PHOTOLYSIS ANALYZER
PHM	PHMETER
PHOT	PHOTOMETER
PMCR	POLIMERASE CHAIN REACTION THERMAL CYCLE
PMG1	PROTON MAGNETOMETER, SCINTREX MP3
PMG2	PROTON MAGNETOMETER, GEOMETRICS G856
PMG3	PROTON MAGNETOMETER, ELSEC 770 PPM
PMSC	MICROSCOPE, PETROGRAPHYCAL
POLGAN	POLAROGRAPHIC ANALYSER
POLGAN1	POLAROGRAPHIC ANALYZER, PAR/174
POTTRA	POTENTIOMETRIC TITRATIONS
PS	PLASMA SPECTROMETER
PTB	CALIBRATION SYSTEM USING PERMEATION TUBES
PTRD	PRESSURE TRANSDUCER
PTS	POTENZIOSTAT
RD1	RADIOMETER, 820 MHZ
RD2	RADIOMETER, 2.5 GHZ
RD3	RADIOMETER, ESOTECA 1000A (MSS)
REC	CHART RECORDER
RGDTC	REDUCED GAS DETECTOR
ROTVC	VIDEO CAMERA, REMOTELY OPERATED
RSP1	RADIO SOUNDING PROBE, BARRY RESEARCH IONOSPHERIC
RSR	RADIO SOUNDING RADIOMETER
SCST1	SINGLE CHANNEL STREAMER, SPARKER 16KJ-200MT
SEMSC	ELECTRON MICROSCOPE, SCANNING
SFC	SUPERCRITICAL FLUID CHROMATOGRAPH
SFEX	SUPERCRITICAL FLUID EXTRACTION
SFL	SPECTROFLUORIMETER
SFMGV	GRAVIMETER, SYMMETRICAL FREE MOTION
SMP1	SAMPLER, NISKIN
SMREC1	SEISMIC RECORDER, SN358DMX

SMS1	SEISMIC SENSOR, S13
SMS2	SEISMIC SENSOR, BB13
SMSC	MICROSCOPE, STEREO
SNDB	SONOBUOYS
SODAR	SOUND DETECTION AND RANGING
SPH	SPECTROPHOTOMETER
SPH1	SPECTROPHOTOMETER, BECKMAN TRACE III
SPH2	SPECTROPHOTOMETER, VARIAN CARY 3
SPR	SPIRAL SYSTEM
SRDAN1	SOLAR RADIATION ANALYZER, CM 5
STI	STERILE INSTRUMENTS FOR SAMPLING
STM	STERILE MATERIALS FOR ISOLATION
STPFL	STOPPED FLOW
STSC1	STEREOSCOPE, ZEISS STEMI DV4
STSC2	STEREOSCOPE, ZEISS STEMI SR
SVIEL	TIME RESOLVED SURFACE VISCOELASTOMETER
TACH	TACHEOMETER
TEMSC	ELECTRON MICROSCOPE, TRANSMISSION
TGC	GAS CHROMATOGRAPH, TITROPROCESSOR
TH	THERMOMETER
THAN	SIMULTANEOUS THERMAL ANALYZER
TM	THEMATIC MAPPER
TMG1	MAGNETOMETER THEODOLITE, SOKKISHA GSI
TRXRFLS	X RAY FLUORESCENCE SPECTROMETER, TOTAL REFLECTION
TVCAM	VIDEO CAMERA
UCF	ULTRACENTRIFUGE
UVVISS	UV/VIS SPECTROMETER
UWQU	UNDERWATER QUANTAMETER
UWSR	UNDERWATER SPECTRORADIOMETER
VACBOT	VACUUM VIALS GLASS BOTTLES
VACEB	VACUUM ELECTROBALANCE
VLFEMR1	VLF-EM AND RESISTIVITY METER, GEONICS EM 16+16R
VLFTRA1	VLF PORTABLE TRANSMITTER, GEONICS TX 27
WAN1	WATER SAMPLER ANALYZER, ACQUA ME-ROSETTE
XRDFC	X RAY DIFFRACTOMETER
XRFLS	X RAY FLUORESCENCE SPECTROMETER
XRFLS1	X RAY FLUORESCENCE SPECTROMETER, PHILIPS PW14-80

Appendix D

SOUTH-POLE: List of the SOURCES

D1 : SOURCE-NAMES extracted from the SOUTH-POLE Directory
(ordered by LONG_NAME)

AMUNDSEN SCOTT BASE	AMSCO
ASTRONOMICAL STATION, TERRA NOVA BAY STATION	OASI
AUXILIARY VESSEL	AV
AUXILIARY VESSEL, MALLIPO	AVM
BAKER ROCKS, TERRA NOVA BAY INLAND	BTNIBR
BALLOON BORNE PAYLOAD	BP
GROUND RECEIVING STATION, TERRA NOVA BAY STATION	BTNR
GROUND STATION, TERRA NOVA BAY STATION	BTN
ICARO GROUND STATION, TERRA NOVA BAY STATION	ICARO
ITALIAN MAGNETIC STATION, TERRA NOVA BAY STATION	BTNM
LAND REMOTE SENSING SATELLITE	LANDSAT
NANSEN ICE SHEET	NIS
NORTH VICTORIA LAND, TERRA NOVA BAY INLAND	BTNINV
PENGUIN BAY, TERRA NOVA BAY	BTNSPB
RESEARCH VESSEL	RV
RESEARCH VESSEL, CARIBOO	RVCB
RESEARCH VESSEL, OGS EXPLORA	RVOGS
RESEARCH VESSEL, POLAR QUEEN	RVPQ
RESEARCH VESSEL, POLARSTERN	RVPS
ROSS SEA, TERRA NOVA BAY	BTNS
RUBBER BOAT	RB
SKUA LAKE, TERRA NOVA BAY INLAND	BTNISL
SYSTEM PROBATOIRE D'OBSERVATION DE LA TERRE	SPOT
TARN FLAT, TERRA NOVA BAY INLAND	BTNITF
TERRANOVA BAY INLAND	BTNI
TUNNEL IN GRANITE, TERRA NOVA BAY STATION	BTNT

D2 : SOURCE-NAMES extracted from the SOUTH-POLE Directory

(ordered by SHORT_NAME)

AMSCO	AMUNDSEN SCOTT BASE
AV	AUXILIARY VESSEL
AVM	AUXILIARY VESSEL, MALLIPO
BP	BALLOON BORNE PAYLOAD
BTN	GROUND STATION, TERRA NOVA BAY STATION
BTNI	TERRANOVA BAY INLAND
BTNIBR	BAKER ROCKS, TERRA NOVA BAY INLAND
BTNINV	NORTH VICTORIA LAND, TERRA NOVA BAY INLAND
BTNISL	SKUA LAKE, TERRA NOVA BAY INLAND
BTNITF	TARN FLAT, TERRA NOVA BAY INLAND
BTNM	ITALIAN MAGNETIC STATION, TERRA NOVA BAY STATION
BTNR	GROUND RECEIVING STATION, TERRA NOVA BAY STATION
BTNS	ROSS SEA, TERRA NOVA BAY
BTNSPB	PENGUIN BAY, TERRA NOVA BAY
BTNT	TUNNEL IN GRANITE, TERRA NOVA BAY STATION
ICARO	ICARO GROUND STATION, TERRA NOVA BAY STATION
LANDSAT	LAND REMOTE SENSING SATELLITE
NIS	NANSEN ICE SHEET
OASI	ASTRONOMICAL STATION, TERRA NOVA BAY STATION
RB	RUBBER BOAT
RV	RESEARCH VESSEL
RVCB	RESEARCH VESSEL, CARIBOO
RVOGS	RESEARCH VESSEL, OGS EXPLORA
RVPQ	RESEARCH VESSEL, POLAR QUEEN
RVPS	RESEARCH VESSEL, POLARSTERN
SPOT	SYSTEM PROBATOIRE D'OBSERVATION DE LA TERRE

Appendix E

SOUTH-POLE: List of the DATA-CENTERS

E1 : DATA-CENTERS extracted from the SOUTH-POLE Directory (ordered by LONG_NAME)

CENTER FOR ENVIRONM. RADIOCHEMSTR., BO	BOUDCGC
CNR RESEARCH AREA, FRA/RM	RMRARF
DEPT. OF VEGETABLE BIOL., FI	FIUDBV
DEPT. OF AGROBIOL. AGROCHEMSTR., VT	VTUDAGRO
DEPT. OF ANALYTICAL CHEMSTR., TO	TOUDCA
DEPT. OF ANIMAL BIOL. SEA ECOLOGY, ME	MEUDBAEM
DEPT. OF BIOLOGY PHYSIOLOGY, PR	PRUDBFG
DEPT. OF BIOLOGY, LE	LEUDBIOL
DEPT. OF BIOLOGY, PD	PDUDBIOL
DEPT. OF BIOLOGY, RM1	RMU1DBIO
DEPT. OF BIOPHYS. ELECTRON. ENGINRG., GE	GEUDIBE
DEPT. OF CELLULAR BIOLOGY, CS	CSUDBC
DEPT. OF EARTH SCIENCES GEOL./PALEONT. SECT., PV	PVUDST
DEPT. OF EARTH SCIENCES GEOLOGY SECT., GE	GEUDST2
DEPT. OF EARTH SCIENCES GEOPHYS. SECT., GE	GEUDST1
DEPT. OF EARTH SCIENCES, FI	FIUDST
DEPT. OF EARTH SCIENCES, PI	PIUDST
DEPT. OF EARTH SCIENCES, SI	SIUDST
DEPT. OF ENVIRONM. BIOLOGY, SI	SIUDBA
DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE	VEUDSA
DEPT. OF EXPER. BIOMEDICINE, PI	PIUDBSIP
DEPT. OF GENERAL INORGAN. CHEMSTR., GE	GEUICGI
DEPT. OF MINERALOGY PETROLOGY, PD	PDUDMP
DEPT. OF MOLEC. CELL. ANIMAL BIOL., CM	CMUDBC
DEPT. OF MOLECULAR BIOLOGY, RM1	RMU1DGBM
DEPT. OF NAVAL ARCH. MARINE ENVIR. ENGIN., TS	TSUDINMA
DEPT. OF ORGANIC CHEMSTR., FI	FIUDCOUS
DEPT. OF PHYSICS , MI	MIUDFISI
DEPT. OF PHYSICS, RM1	RMU1DFIS
DEPT. OF PUBLIC HEALTH ANAL. CHEMSTR., FI	FIUDSPEC
DEPT. OF VEGETABLE BIOL., RM1	RMU1DBV1
ENEA CRE CASACCIA, ANTARCTIC PROJECT	RME3PA
ENEA CRE CASACCIA, DATA ANAL. CNTR.	RME3AEAS
ENEA CRE CASACCIA, DIGITAL IMAGERY	RME3AEI
ESA, EARTHNET PROGRAMME OFFICE	ESA/EPO
INST. FOR ATMOSPHERIC PHYSICS, FRA/RM	RMRIFA2
INST. FOR BOTANIC SCIENCES, GE	GEUIBHOB
INST. FOR CHEMICAL SCIENCES, UR	URUISC
INST. FOR COMPARATIVE ANATOMY, GE	GEUIAC

INST. FOR DERMATOLOGY MYCOLOGY SECT., RM	RMAIODSS
INST. FOR E.M. WAVES RESEARCH, FI	FIRIROE
INST. FOR ENVIRONM. GEOPHYS. METHODLG., MO	MORIMGA
INST. FOR ENVIRONM. SEA SCIENCES, GE	GEUISAM1
INST. FOR EXPER. TALASSOGRAPHY, ME	MERIST
INST. FOR EXPER. TALASSOGRAPHY, TA	TARISTAC
INST. FOR EXPER. TALASSOGRAPHY, TS	TSRISTEV
INST. FOR GENERAL PHYSIOLOGY, GE	GEUIFG
INST. FOR GEOLOGY PALEONTOLOGY, TS	TSUIGP
INST. FOR HIGH/LOW ATM. PHYS. CHEM. PHENOM., BO	BORFISBA
INST. FOR INSTR. ANAL. CHEMSTR., PI	PIRICAS
INST. FOR ISOTOPE GEOCHRON. GEOCHEMSTR., PI	PIRIGGI
INST. FOR MEDICAL MYCOLOGY, PV	PVUIMM
INST. FOR METROLOGY "G. COLONNETTI", TO	TORIMGC
INST. FOR MINERALOGY PETROLOGY, MO	MOUIMP
INST. FOR NATIONAL GEOPHYSICS, RM	RMAING
INST. FOR OCEANOLOGY PALEOECOLOGY, CT	CTUIPOP
INST. FOR PHARMAC. ALIM. ANALYS. TECHNLG., GE	GEUIATFA
INST. FOR PROTEIN BIOCHEMSTR. ENZYMOLOGY, NA	NARIBPE
INST. FOR RADIOELEMENT CHEMSTR. TECHNLG., PD	PDRICTR
INST. FOR SEA BIOLOGY, VE	VERIBM
INST. FOR SEA FISHERY RESEARCH, AN	ANRIRPEM
INST. FOR SEA GEOLOGY, BO	BORIGM
INTERDPT. CNTR. FOR APPL. INFO. COMPUT., MO	MOUCICAI
INTERNAT. INST. FOR GENETICS BIOPHYS., NA	NARIIGB
ITALIAN INST. FOR HYDROBIOLOGY, NO	NORIII
MARINE SORTING CENTER ITALIA	MSCI
MEDNET DATA CENTER	MDC
OBSERVATORY FOR EXPER. GEOPHYSICS, TS	TSAOGS
OBSERVATORY FOR GEOPHYS. SCIENCES, MO	MOUOGEOF
UNIVERSITY INST. FOR NAVAL RESEARCH, NA	NAUIUN2
ZOOLOGICAL STATION A. DOHRN, NA	NAASZN1

E2 : DATA-CENTERS extracted from the SOUTH-POLE Directory
(ordered by SHORT_NAME)

ANRIRPEM	INST. FOR SEA FISHERY RESEARCH, AN
BORFISBA	INST. FOR HIGH/LOW ATM. PHYS. CHEM. PHENOM., BO
BORIGM	INST. FOR SEA GEOLOGY, BO
BOUDCGC	CENTER FOR ENVIRONM. RADIOCHEMSTR., BO
CMUDBC	DEPT. OF MOLEC. CELL. ANIMAL BIOL., CM
CSUDBC	DEPT. OF CELLULAR BIOLOGY, CS
CTUIPOP	INST. FOR OCEANOLOGY PALEOECOLOGY, CT
ESA/EPO	ESA, EARTHNET PROGRAMME OFFICE
FIRIROE	INST. FOR E.M. WAVES RESEARCH, FI
FIUDBV	DEPT. OF VEGETABLE BIOL., FI
FIUDCOUS	DEPT. OF ORGANIC CHEMSTR., FI
FIUDSPEC	DEPT. OF PUBLIC HEALTH ANAL. CHEMSTR., FI
FIUDST	DEPT. OF EARTH SCIENCES, FI
GEUDIBE	DEPT. OF BIOPHYS. ELECTRON. ENGINRG., GE
GEUDST1	DEPT. OF EARTH SCIENCES GEOPHYS. SECT., GE
GEUDST2	DEPT. OF EARTH SCIENCES GEOLOGY SECT., GE
GEUIAC	INST. FOR COMPARATIVE ANATOMY, GE
GEUIATFA	INST. FOR PHARMAC. ALIM. ANALYS. TECHNLG., GE
GEUIBHOB	INST. FOR BOTANIC SCIENCES, GE
GEUICGI	DEPT. OF GENERAL INORGAN. CHEMSTR., GE
GEUIFG	INST. FOR GENERAL PHYSIOLOGY, GE
GEUISAM1	INST. FOR ENVIRONM. SEA SCIENCES, GE
LEUDBIOL	DEPT. OF BIOLOGY, LE
MDC	MEDNET DATA CENTER
MERIST	INST. FOR EXPER. TALASSOGRAPHY, ME
MEUDBAEM	DEPT. OF ANIMAL BIOL. SEA ECOLOGY, ME
MIUDFISI	DEPT. OF PHYSICS , MI
MORIMGA	INST. FOR ENVIRONM. GEOPHYS. METHODLG., MO
MOUCICAI	INTERDPT. CNTR. FOR APPL. INFO. COMPUT., MO
MOUIMP	INST. FOR MINERALOGY PETROLOGY, MO
MOUOGEOF	OBSERVATORY FOR GEOPHYS. SCIENCES, MO
MSCI	MARINE SORTING CENTER ITALIA

NAASZN1	ZOOLOGICAL STATION A. DOHRN, NA
NARIBPE	INST. FOR PROTEIN BIOCHEMSTR. ENZYMOLOGY, NA
NARIIGB	INTERNAT. INST. FOR GENETICS BIOPHYS., NA
NAUIUN2	UNIVERSITY INST. FOR NAVAL RESEARCH, NA
NORIII	ITALIAN INST. FOR HYDROBIOLOGY, NO
PDRICTR	INST. FOR RADIOELEMENT CHEMSTR. TECHNLG., PD
PDUDBIOL	DEPT. OF BIOLOGY, PD
PDUDMP	DEPT. OF MINERALOGY PETROLOGY, PD
PIRICAS	INST. FOR INSTR. ANAL. CHEMSTR., PI
PIRIGGI	INST. FOR ISOTOPE GEOCHRON. GEOCHEMSTR., PI
PIUDBSIP	DEPT. OF EXPER. BIOMEDICINE, PI
PIUDST	DEPT. OF EARTH SCIENCES, PI
PRUDBFG	DEPT. OF BIOLOGY PHYSIOLOGY, PR
PVUDST	DEPT. OF EARTH SCIENCES GEOL./PALEONT. SECT., PV
PVUIMM	INST. FOR MEDICAL MYCOLOGY, PV
RMAING	INST. FOR NATIONAL GEOPHYSICS, RM
RMAIODSS	INST. FOR DERMATOLOGY MYCOLOGY SECT., RM
RME3AEAS	ENEA CRE CASACCIA, DATA ANAL. CNTR.
RME3AEI	ENEA CRE CASACCIA, DIGITAL IMAGERY
RME3PA	ENEA CRE CASACCIA, ANTARCTIC PROJECT
RMRARF	CNR RESEARCH AREA, FRA/RM
RMRIFA2	INST. FOR ATMOSPHERIC PHYSICS, FRA/RM
RMU1DBIO	DEPT. OF BIOLOGY, RM1
RMU1DBV1	DEPT. OF VEGETABLE BIOL., RM1
RMU1DFIS	DEPT. OF PHYSICS, RM1
RMU1DGBM	DEPT. OF MOLECULAR BIOLOGY, RM1
SIUDBA	DEPT. OF ENVIRONM. BIOLOGY, SI
SIUDST	DEPT. OF EARTH SCIENCES, SI
TARISTAC	INST. FOR EXPER. TALASSOGRAPHY, TA
TORIMGC	INST. FOR METROLOGY "G. COLONNETTI", TO
TOUDCA	DEPT. OF ANALYTICAL CHEMSTR., TO
TSAOGS	OBSERVATORY FOR EXPER. GEOPHYSICS, TS
TSRISTEV	INST. FOR EXPER. TALASSOGRAPHY, TS
TSUDINMA	DEPT. OF NAVAL ARCH. MARINE ENVIR. ENGIN., TS
TSUIGP	INST. FOR GEOLOGY PALEONTOLOGY, TS
URUISC	INST. FOR CHEMICAL SCIENCES, UR

VERIBM	INST. FOR SEA BIOLOGY, VE
VEUDSA	DEPT. OF ENVIRONM. SCIENCES GEOMIN. SECT., VE
VTUDAGRO	DEPT. OF AGROBIOL. AGROCHEMSTR., VT