



**National SCAR Committee, Spain**

**ANNUAL SCAR REPORT ON SPANISH ANTARCTIC  
SCIENTIFIC ACTIVITIES  
2011-2012 CAMPAIGN  
AND  
PLANNED NEW PROGRAMMES**

**Report no. 24  
for the Scientific Committee on Antarctic Research (SCAR)**

**2012**

**INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS  
SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH**

**ANNUAL SCAR REPORT ON  
NATIONAL ANTARCTIC SCIENTIFIC ACTIVITIES  
1 July 2011 - 30 June 2012**

**Member Country: SPAIN**

**National SCAR Committee:**

|           |                                                                                          |
|-----------|------------------------------------------------------------------------------------------|
| Title     | Comité Nacional de Investigación Antártica - SCAR                                        |
| Address   | Facultad de Ciencias, módulo 06<br>Universidad Autónoma de Madrid<br>28049 Madrid, Spain |
| Telephone | +34 91 497 45 13                                                                         |
| Fax       | +34 91 497 29 82                                                                         |
| Web site  | www.uam.es/cn-scar                                                                       |

Chairman/President Dr. J. López-Martínez

**Representatives:**

**to SCAR**

|                    | <b>Name</b>           | <b>Address</b> |
|--------------------|-----------------------|----------------|
| Permanent Delegate | Dr. J. López-Martínez | (1)            |
| Alternate Delegate | Dr. L.G. Sancho       | (2)            |

**to SCAR Standing Scientific Groups**

|                   |                         |     |
|-------------------|-------------------------|-----|
| Geosciences       | Dr. J. Galindo-Zaldívar | (3) |
|                   | Dr. J.A. Flores         | (4) |
| Life Sciences     | Dr. L.G. Sancho         | (2) |
|                   | Dr. J.M. Gili           | (5) |
| Physical Sciences | Dr. D. Gomis            | (6) |
|                   | Dr. F.J. Navarro        | (7) |

**National Operating units:**

***Scientific projects management:***

|           |                                                                                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title     | Área de Gestión de Investigación Polar<br>Ministerio de Economía y Competitividad<br>Secretaría de Estado de Investigación, Desarrollo e Innovación<br>Dirección General de Investigación y Gestión del Plan Nacional de I+D+i<br>Departamento Técnico de Medio Ambiente y Recursos Naturales |
| Address   | Albacete, 5. 28043 Madrid. Spain                                                                                                                                                                                                                                                              |
| Telephone | 34 91 603 77 10 / Fax: 34 91 603 70 12                                                                                                                                                                                                                                                        |

***Logistics and operations:***

|           |                                                                                                         |
|-----------|---------------------------------------------------------------------------------------------------------|
| Title     | Unidad de Tecnología Marina (UTM)<br>Centro Mediterráneo de Investigaciones Marinas y Ambientales, CSIC |
| Address   | Passeig Marítim de la Barceloneta, 37-49<br>08003 Barcelona. Spain                                      |
| Telephone | 34 93 230 95 00 / Fax 34 93 230 95 55                                                                   |

***Data Center:***

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| Title     | National Polar Data Center<br>Instituto Geológico y Minero de España |
| Address   | Ríos Rosas, 23. 28003 Madrid. Spain                                  |
| Telephone | 34 91 349 57 31                                                      |

## PERMANENT STATIONS (WINTERING)

| Name | Location | Coordinates |
|------|----------|-------------|
| NONE |          |             |

## SUMMER-ONLY BASES

| Name                                                                                                                                                                                   | Location          | Coordinates                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------|
| <b>Juan Carlos I</b><br>(20 Nov. 2011 - 1 March 2012)<br>( <a href="http://www.utm.csic.es/bae.asp">http://www.utm.csic.es/bae.asp</a> )                                               | Livingston Island | 62° 39' 46" S<br>60° 23' 20" W<br>Altitude aprox.: 10 m |
| <b>Gabriel de Castilla</b><br>(20 Nov. 2011 - 1 March 2012)<br>( <a href="http://www.ejercito.mde.es/mexterior/webantartida/">http://www.ejercito.mde.es/mexterior/webantartida/</a> ) | Deception Island  | 62° 58' 40" S<br>60° 40' 30" W<br>Altitude aprox.: 10 m |

## VESSELS OPERATING IN ANTARCTICA

- R/V Hespérides <http://www.utm.csic.es/hesperides.asp>
- Las Palmas <http://www.utm.csic.es/laspalmas.asp>

## AUTOMATIC RECORDING STATIONS/OBSERVATORIES

| Name/Identifier | Coordinates                    | Parameters Recorded           |
|-----------------|--------------------------------|-------------------------------|
| 89064           | 62° 39' 46" S<br>60° 23' 20" W | Meteorology                   |
| 1900-03         | 62° 58' 40" S<br>60° 40' 30" W | WOVO network<br>(summer only) |
| -----           | 62° 39' 46" S<br>60° 23' 20" W | Seismology<br>(summer only)   |

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NATIONAL PROGRAMMES/PROJECTS

|          |                                                                 |                                   |
|----------|-----------------------------------------------------------------|-----------------------------------|
| -----    | Geographic:<br>62° 39' 44" S<br>60° 23' 21" W                   | Magnetic elements<br>(D, H, Z, F) |
|          | Geomagnetic:<br>52° 06' 15" S<br>08° 12' 40" E<br>19.4 m a.s.l. |                                   |
| Campbell | 62 ° 66' S<br>60 ° 30' W<br>(Johnson glacier)                   | Meteorology                       |
| Campbell | 62 ° 65' S<br>61 ° 11' W<br>(Byers Peninsula)                   | Meteorology                       |

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NATIONAL PROGRAMMES/PROJECTS

**GEOSCIENCES**

| Subject                       | Investigation                                                                         | Locality                                       | Duration  | Principal Investigator | Address |
|-------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------|-----------|------------------------|---------|
| Geodesy                       | * GPS observations<br>* Deformation models                                            | South Shetland Islands region                  | 2010-2012 | M. Berrocoso           | (8)     |
| Seismology                    | * Broadband seismic stations maintenance                                              | Livingston and Deception islands, Cierva Point | 2011-2012 | F.J. Almendros         | (9)     |
| Marine geology and geophysics | * International data compilation<br>* Bathymetric chart                               | Drake Passage                                  | 2012-2013 | F. Bohoyo              | (10)    |
| Geodesy                       | * Volcanic activity monitoring<br>* Thermal anomalies                                 | Livingston and Deception islands               | 2012-2013 | M. Berrocoso           | (8)     |
| Volcanology                   | * Volcanic risk<br>* Contingency plans                                                | Deception Island                               | 2012-2013 | A. Geyer               | (11)    |
| Geology                       | * Lithologic and chronostratigraphic studies<br>* Volcanic and tectonic events dating | Deception Island, Port Foster                  | 2012-2013 | A. Maestro             | (12)    |
| Geology                       | * Active layer<br>* Serial data CALM and TSP                                          | Livingston and Deception islands               | 2012-2013 | M.A. de Pablo          | (13)    |
| Tectonics and Geophysics      | * Seismic monitoring<br>* Maintenance of permanent stations                           | Livingston and Deception islands               | 2012-2013 | D. Stich               | (14)    |

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## NATIONAL PROGRAMMES/PROJECTS

|                           |                                    |                                                                                |            |                   |      |
|---------------------------|------------------------------------|--------------------------------------------------------------------------------|------------|-------------------|------|
| Geology                   | * Tectonic plates                  | Tierra de Fuego, Jubany, Greenwich Island, James Ross archipelago and Hope Bay | 2012 -2014 | F. Bohoyo         | (10) |
|                           | * Continental margins              |                                                                                |            |                   |      |
|                           | * Geophysical and structural data  |                                                                                |            |                   |      |
| Marine geology            | * Glacial evolution                | Data from Wilkes Land IODP                                                     | 2012-2014  | C. Escutia        | (15) |
|                           | * Palaeoenvironmental changes      |                                                                                |            |                   |      |
| Geology and Geomorphology | * Geomorphology and neotectonics   | King George, Half Moon, Livingston and Deception islands                       | 2012-2014  | J. López-Martínez | (1)  |
|                           | * Hydrology and Permafrost         |                                                                                |            |                   |      |
|                           | * Remote sensing and Human impacts |                                                                                |            |                   |      |
| Marine geology            | * Geodynamic evolution             | Drake Passage, Scotia Sea, Bransfield Strait                                   | 2012-2014  | A. Maldonado      | (16) |
|                           | * Palaeoceanography                |                                                                                |            |                   |      |
|                           | * Continental fragmentation        |                                                                                |            |                   |      |

## LIFE SCIENCES

| Subject             | Investigation                       | Locality                                           | Duration  | Principal Investigator | Address |
|---------------------|-------------------------------------|----------------------------------------------------|-----------|------------------------|---------|
| Marine biology      | * Hydrozoans biodiversity           | Laboratory                                         | 2010-2012 | A.L. Peña              | (17)    |
|                     | * Benthic ecosystem                 |                                                    |           |                        |         |
|                     | * Phylogeny                         |                                                    |           |                        |         |
| Terrestrial biology | * Lithobiontic microbial ecosystems | Navarino Island, Livingston Island and Dry Valleys | 2010-2012 | A. de los Ríos         | (18)    |
|                     | * Biodiversity                      |                                                    |           |                        |         |
|                     | * Environmental gradients           |                                                    |           |                        |         |

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|                               |                                                                                                                                |                                                     |           |                |      |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------|----------------|------|
| Terrestrial biology           | <ul style="list-style-type: none"><li>* Plants productivity</li><li>* Environmental gradients</li></ul>                        | Navarino Island, Livingston Island and Dry Valleys  | 2010-2012 | L.G. Sancho    | (4)  |
| Chemical ecology              | <ul style="list-style-type: none"><li>* Natural products from marine benthos</li><li>* Pharmacological interest</li></ul>      | Deception Island                                    | 2011-2013 | C. Ávila       | (19) |
| Environmental impact          | <ul style="list-style-type: none"><li>* Human impact</li><li>* Ecological indicators</li></ul>                                 | Barrientos Island and Byers Peninsula               | 2011-2012 | J. Benayas     | (20) |
| Molecular biology             | <ul style="list-style-type: none"><li>* Genomics and proteomics</li><li>* Microbial environmental adaptation</li></ul>         | Deception Island                                    | 2011-2012 | C. Cid Sánchez | (21) |
| Molecular biology             | <ul style="list-style-type: none"><li>* Genomics and proteomics</li><li>* Microbial environmental adaptation</li></ul>         | King George Island, Antarctic Peninsula             | 2012-2013 | A. Aguilera    | (22) |
| Biology                       | <ul style="list-style-type: none"><li>* Biogenic material</li><li>* Organic matter accumulation</li></ul>                      | Laboratory (material from Larsen A y B ice shelves) | 2012-2013 | J.M. Gili      | (5)  |
| Penguin studies               | <ul style="list-style-type: none"><li>* Ecophysiology</li><li>* Immune response</li><li>* Host-parasites interaction</li></ul> | Deception Island                                    | 2012-2014 | A. Barbosa     | (23) |
| Non marine aquatic ecosystems | <ul style="list-style-type: none"><li>* Microbial cyanobacterial mats</li><li>* Virome and metagenomics</li></ul>              | Byers Peninsula, and Alexander Island               | 2012-2014 | A. Quesada     | (24) |

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NATIONAL PROGRAMMES/PROJECTS

\* Ecological dynamics

**PHYSICAL SCIENCES**

| Subject                             | Investigation                                               | Locality                         | Duration  | Principal Investigator | Address |
|-------------------------------------|-------------------------------------------------------------|----------------------------------|-----------|------------------------|---------|
| Permafrost thermodynamics           | * Thermal state<br>* Energy balance                         | Livingston and Deception islands | 2010-2012 | M. Ramos               | (25)    |
| Geophysics<br>Geomagnetism          | * Ionospheric change studies<br>* Historical data series    | Livingston Island                | 2011-2013 | D. Altadill            | (26)    |
| Geophysics<br>Geomagnetism          | * Geomagnetic monitoring<br>* HF data transmission          | Livingston Island                | 2011-2013 | J. Pijoan              | (27)    |
| Geophysics<br>Geomagnetism          | * Ionospheric models<br>* Spatial methods                   | Livingston Island                | 2011-2013 | J. Sanz                | (28)    |
| Physical oceanography               | * Circumpolar current<br>* Oceanic ventilation              | South Scotia Sea                 | 2012-2013 | M. Flexas              | (29)    |
| Glacial thermo-mechanical processes | * Calving fluxes<br>* Mass balance<br>* Numerical modelling | Livingston Island                | 2012-2014 | F.J. Navarro           | (7)     |

**CONTACT ADRESSES, TELEPHONE,  
FACSIMILE AND E-MAIL NUMBERS**

- (1) Jerónimo LÓPEZ-MARTÍNEZ  
Dpto. Geología y Geoquímica  
Facultad de Ciencias  
Universidad Autónoma de Madrid  
Ctra. Colmenar Viejo, km 15  
28049 Madrid  
Tel.: 34 91 497 45 13  
Fax: 34 91 497 29 82  
e-mail: jeronimo.lopez@uam.es
- (2) Leopoldo G. SANCHO  
Dpto. Biología Vegetal II  
Facultad de Farmacia  
Universidad Complutense de Madrid  
Ciudad Universitaria, s/n  
28040 Madrid  
Tel.: 34 91 394 17 69 / 394 17 71  
Fax: 34 91 394 17 74  
e-mail: sancholg@farm.ucm.es
- (3) Jesús GALINDO-ZALDIVAR  
Dpto. Geodinámica  
Universidad de Granada  
18071 Granada  
Tel.: 34 958 24 33 49  
Fax: 34 958 24 85 27  
e-mail: jgalindo@ugr.es
- (4) José Abel FLORES  
Dpto. Geología  
Facultad de Ciencias  
Universidad de Salamanca  
37008 Salamanca  
Tel.: 34 923 29 44 97  
Fax: 34 923 29 45 14  
e-mail: flores@usal.es
- (5) Josep M<sup>a</sup> GILI  
Dpto. Biología Marina y Oceanografía  
Instituto de Ciencias del Mar, CSIC  
Paseo Marítimo de la Barceloneta, 37-49  
08003 Barcelona  
Tel.: 34 93 230 95 46  
Fax: 34 93 230 95 55  
e-mail: gili@icm.csic.es
- (6) Damià GOMIS  
Dpto. Ecología y Recursos Naturales  
Instituto Mediterráneo de Estudios  
Avanzados  
Universidad de las Islas Baleares - CSIC  
07122 Palma de Mallorca  
Tel: 34 971 17 32 36  
Fax: 34 971 17 34 26  
e-mail: damia.gomis@uib.es
- (7) Francisco NAVARRO  
Dpto. Matemática Aplicada  
ETSI de Telecomunicaciones  
Universidad Politécnica de Madrid  
Ciudad Universitaria, s/n  
28040 Madrid  
Tel.: 34 91 453 35 65  
Fax: 34 91 336 72 89  
e-mail: francisco.navarro@upm.es
- (8) Manuel BERROCOSO  
Dpto. Matemáticas  
Facultad de Ciencias  
Universidad de Cádiz  
11510 Puerto Real, Cádiz  
Tel.: 34 956 01 64 73  
Fax: 34 956 01 62 88  
e-mail: manuel.berrocoso@uca.es
- (9) Francisco Javier ALMENDROS  
Instituto Andaluz de Geofísica  
Universidad de Granada  
Campus de la Cartuja  
18071 Granada  
Tel: 34 958 24 95 52  
Fax: 34 958 16 09 07  
e-mail: alm@ugr.es
- (10) Fernando BOHOYO  
Instituto Geológico y Minero de España  
La Calera, 1  
Tres Cantos  
28760 Madrid  
Tel.: 34 91 728 72 71  
Fax: 34 91 728 72 02  
e-mail: bohoyo@igme.es
- (11) Adelina GEYER  
Inst. de Ciencias de la Tierra Jaume Almera  
Lluís Solé Sabaris, s/n  
08028 Barcelona  
Tel.: 34 93 409 54 10  
e-mail: ageyer@ija.csic.es
- (12) Adolfo MAESTRO  
Instituto Geológico y Minero de España  
La Calera, 1. Tres Cantos  
28760 Madrid  
Tel.: 34 91 728 72 60  
Fax: 34 91 728 72 02  
e-mail: a.maestro@igme.es
- (13) Miguel Angel de PABLO  
Dpto. Geología  
Universidad de Alcalá de Henares  
Ctra. Madrid-Barcelona, km 33,600  
28871 Alcalá de Henares, Madrid  
Tel: 34 885 64 25

Fax: 34 885 50 90  
e-mail: miguelangel.depablo@uah.es

(14) Daniel STICH

Instituto Andaluz de Geofísica  
Universidad de Granada  
Campus Universitario de Cartuja, s/n  
18071 Granada  
Tel.: 34 958 24 89 12  
Fax: 34 958 16 09 07  
e-mail: daniel@iag.ugr.es

(15) Carlota ESCUTIA

Instituto Andaluz de Ciencias de la Tierra  
CSIC- Universidad de Granada  
Avda. de las Palmeras, 4  
18100 Armilla, Granada  
Tel.: 34 958 24 41 59  
Fax: 34 958 55 26 20  
e-mail: cescutia@ugr.es

(16) Andrés MALDONADO

Instituto Andaluz de Ciencias de la Tierra  
CSIC- Universidad de Granada  
Avda. de las Palmeras, 4  
18100 Armilla, Granada  
Tel.: 34 958 23 00 00 ext. 190219  
Fax: 34 958 55 26 20  
e-mail: amaldona@ugr.es

(17) Álvaro Luis PEÑA

Instituto Cavanilles de Biodiversidad y  
Biología Evolutiva  
Universidad de Valencia, Campus Paterna  
Edif. Institut, apdo. 22085  
46071 Valencia  
Tel.: 34 96 354 37 70  
e-mail: alvaro.l.pena@uv.es

(18) Asunción de los RÍOS

Instituto de Recursos Naturales, CSIC  
Serrano 115  
28006 Madrid  
Tel.: 34 91 745 25 00  
e-mail: arios@ccma.csic.es

(19) Conxita ÁVILA

Edificio Ramón Margalef  
Facultad de Biología  
Universidad de Barcelona  
Avinguda Diagonal 645  
08028 Barcelona  
Tel: 34 93 402 01 61  
Fax: 34 93 403 57 40  
e-mail: conxita.avila@ub.edu

(20) Javier BENAYAS

Dpto. Ecología  
Facultad de Ciencias  
Universidad Autónoma de Madrid  
Cantoblanco

28049 Madrid  
Tel.: 34 91 497 49 59  
Fax: 34 91 497 86 43  
e-mail: javier.benayas@uam.es

(21) Cristina CID-SÁNCHEZ

Centro de Astrobiología (INTA)  
Ctra. de Ajalvir, km 4,5  
8850 Torrejón de Ardoz, Madrid  
Tel.: 34 91 520 64 55  
Fax: 34 91 520 10 74  
e-mail: cidsc@inta.es

(22) Ángeles AGUILERA

Centro de Astrobiología (INTA)  
Ctra. de Ajalvir, km 4.5  
28850 Torrejón de Ardoz  
Madrid  
Tel.: 34 91 520 64 61  
e-mail: aguileraba@inta.es

(23) Andrés BARBOSA

Dpto. Ecología Evolutiva  
Museo Nacional de Ciencias Naturales, CSIC  
José Gutiérrez Abascal, 2  
Tel: 34 91 411 13 28  
28006 Madrid  
e-mail: barbosa@mncn.csic.es

(24) Antonio QUESADA

Dpto. Biología  
Facultad de Ciencias  
Universidad Autónoma de Madrid  
Ctra. Colmenar Viejo km 15  
28049 Madrid  
Tel.: 34 91 497 81 81  
Fax: 34 91 497 83 44  
e-mail: antonio.quesada@uam.es

(25) Miguel RAMOS

Dpto. Física  
Facultad de Ciencias  
Universidad de Alcalá de Henares  
Ctra. Madrid-Barcelona, km 33,600  
28871 Alcalá de Henares, Madrid  
Tel.: 34 91 885 49 17  
Fax: 34 91 885 49 42  
e-mail: miguel.ramos@uah.es

(26) David ALTADILL

Observatorio del Ebro, CSIC  
43520 Roquetes  
Tarragona.  
Tel: 34 977 500 511  
Fax: 34 977 504 660  
e-mail: daltadill@obsebre.es

(27) Juan Luis PIJOAN  
E. T. S. de I. Electrónica e Informática La Salle  
Passeig Bonanova, 8  
08022 Barcelona  
Tel.: 34 93 290 24 00  
Fax: 34 93 290 24 16  
e-mail: joanp@salleurl.edu

(28) Jaime SANZ SUBIRANA  
Facultad de Matemáticas y Estadística  
Universidad Politécnica de Catalunya  
Sepúlveda, 84  
08015 Barcelona  
Tel.: 34 93 401 60 30 / 646 949 079  
e-mail: jaume@ma4.upc.edu

(29) Mar FLEXAS  
Dpto. Ecología y Recursos Naturales  
Instituto Mediterráneo de Estudios  
Avanzados  
Universidad de las Islas Baleares-CSIC  
Miquel Marqués, 21  
07190 Esporles, Mallorca  
Tel: 34 971 61 13 37  
Fax: 34 971 61 17 61  
e-mail: mm.flexas@uib.es