

# ARGENTINA

## NATIONAL REPORT TO SCAR WG-GGI

(Tokyo - JAPAN - 2000)

REPORT OF ACTIVITIES 1998 - 2000

Prepared by Federico Mayer  
Servicio de Hidrografia Naval - Argentina  
Representative to SCAR WG-GGI

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ADDRESS:

Servicio de Hidrografia Naval  
Av. Montes de Oca 2124  
1271 - BUENOS AIRES - Argentina  
FAX: +54 (0)11 4301 3883  
shn@rina.hidro.gov.ar

## 1. FIELD ACTIVITIES

### 1. IGPS for GIANT Program - SCAR Epoch Campaigns

#### 1.1.1 South American Stations:

LA PLATA (LAT. -34.9°; LONG. -57.9° (Permanent IGS)

RIO GRANDE (LAT. -53.8°; LONG. -67.7°)

Data of SCAR EPOCH GPS CAMPAIGNS (1999 - 2000) available by Raúl PERDOMO

Facultad de Ciencias Astronómicas y Geofísicas - UNLP

Paseo del Bosque - 1900 LA PLATA - (PBA) Argentina

FAX: +54 (0)221 4211 761

E-Mail: [perdomo@fcaglp.fcaglp.unlp.edu.ar](mailto:perdomo@fcaglp.fcaglp.unlp.edu.ar)

#### 1.1.2 Antarctic Stations:

BELGRANO II (Vahsel Bay, Bertrab Nunatak)

Code: BELG

Receiver: ASHTECH Z-XII

Equipment owner: AWI

JUBANY (Dallmann Laboratory, Potter Cove, King George Island)

Code: DALL

Receiver: TRIMBLE 4000 SSi

Equipment owner: AWI

ORCADAS (Laurie Island, South Orkney Islands)

Code: BORC (started in April 1999)

Receiver: ASHTECH Z-XII

Equipment owner: CERi

SAN MARTIN (Marguerite Bay - Debenham Island)

Code: SMRT (started in April 1999)

Receiver: ASHTECH Z-XII

Equipment owner: AWI

#### REMARKS:

##### a) Acronyms:

AWI: Alfred Wegener Institut für Polar- und Meeresforschung  
Columbusstrasse  
D - 2850 BREMERHAVEN - Germany  
FAX: +49 (0)471 4831 1149  
E-Mail: [schenke@awi-bremerhaven.de](mailto:schenke@awi-bremerhaven.de)

CERi: Center for Earthquake Research and Information - The University of Memphis  
CAMPUS BOX 526590 - Memphis, TN 38152 6590 - USA  
E-Mail: [smalley@ceri.memphis.edu](mailto:smalley@ceri.memphis.edu)

IAA/DNA: Instituto Antártico Argentino - Dirección Nacional del Antártico  
Cerrito 1248 - (1010) BUENOS AIRES - Argentina  
FAX: +54 (0)11 4812 2039  
E-Mail: [afz@dna.gov.ar](mailto:afz@dna.gov.ar)

IGMA: Instituto Geográfico Militar  
Cabildo 381 - 1426 - BUENOS AIRES - Argentina  
FAX: +54 (0)11 4576 5529  
E-Mail: [public@mapas.igm.gov.ar](mailto:public@mapas.igm.gov.ar)

IPG: Institut für Planetare Geodäsie  
Technische Universität Dresden  
D - 01062 DRESDEN - Germany  
FAX: +49 (0)351 4637063  
E-Mail: dietrich@ipg.geo.tu-dresden.de

b) Data Availability:  
By IPG or equipment owners (See a). This also applies to 1.1.3 and 1.1.4

c) Seismic & Tide Data: See 1. 1. 3

### 1.1.3 Complementary Data (continuous monitoring)

#### TIDE GAUGES:

Esperanza (prediction available at SHN)  
Equipment owner: NOAA  
San Martin  
Equipment owner: AWI  
Jubany (discontinued in May 2000. Prediction available at SHN)  
Equipment owner: AWI

#### SEISMOLOGY:

Belgrano II  
Equipment owner: AWI

### 1.1.4 Permanent GPS Stations

BELG (See 1. 1. 2)  
BORC (See 1. 1.2) from April 1999...  
DALL (See 1. 1. 2)  
SNMT (See 1. 1. 2) from April 1999...

### 1.2 Hydrographic Surveys

With ARA "ALMIRANTE IRIZAR" Icebreaker  
Bathymetry - on a permanent basis  
With ARA "PUERTO DESEADO" Vessel  
Austral Summer 1998/99:  
DECEPCIÓN (Deception) Island (inside & outside)  
SAN MARTIN (Marguerite Bay)  
Austral Summer 1999/2000:  
DECEPCIÓN (Deception) Island  
SAN MARTIN (Marguerite Bay)  
Contact: Commander J. Lapenta <dhidro@shn.rina.gov.ar>  
Servicio de Hidrografia Naval (Address on cover)

### 1.3 Remote Sensing

1.3.1 a) Shelf and floating Ice updating for national charts  
b) Nautical chart updating

Experiences and investigation.

a) On the South Weddell Sea (Filchner Ice Shelf)  
b) On the Gerlache Strait and Palmer Archipelago

Sensors and modes:

RADARSAT SAR SI, S2, S3, WI and W2

Software: IDRISI, PCI, ERDAS

More information:

Lic. Manuel Picasso      picasso@rina.ara.mil.ar

Ing. Hector Salgado      salgado@rina.ara.mil.ar

- 1.3.2 For Ice-Snow Cover Dynamic Studies  
 a) in Antarctic Peninsula, Marguerite Bay and on King George Island, more information by:  
 Institut für Physische Geographie  
 A-L Universität Freiburg i.Br. Werderring 4  
 D -79085 FREIBURG - Germany
- 1.3.3 Detailed Ice Front Monitoring on northern LARSEN Ice Shelf (typically between latitudes - 65<sup>0</sup> (Seal Nunataks) and - 66<sup>0</sup> (Jason Peninsula). Two aerial DGPS (post-processed) surveys were performed: on October 11, 1999 and January 24, 2000.  
 This monitoring is also complemented with ERS 1 and ERS 2 SAR, and/or other space-based imagery, with DGPS ground control.  
 IAA (See 1. 1.2 Remark) in collaboration with IMG I (Institute for Meteorology & Geophysics INNSBRUCK University - Austria).  
 More information: glacio@dna.gov.ar (Publications reported through SCAR WG- Glaciology).

## 2. MAPPING ACTIVITIES

- 2.1 Topographic Mapping  
 INSTITUTO GEOGRÁFICO MILITAR (Address in 1. 1.2 a)  
 Title: Base Jubany  
 Projection: Gauß-Krüger (WGS84). Contour interval: 1 m  
 Scale: 1: 1 250  
 Status: in preparation, in collaboration with the Environmental Management Program Group of IAA/DNA <ambiente@dna.gov.ar>.
- 2.2.1 Thematic Mapping  
 IAA/DNA  
 Title: Península Potter  
 Status: under development, based upon post-processed DGPS information. Originally conceived for geological applications, might be useful to multidisciplinary works in the area. Contact: <dct@dna.gov.ar>. Preliminary version: <<http://www.dna.gov.ar/divulgac/mapdig.htm>>

National institution involved with thematic mapping:  
 COMISIÓN NACIONAL de ACTIVIDADES ESPACIALES  
 Pasco Colón 751  
 1063 - BUENOS AIRES - Argentina  
 FAX: (+54 1) 331-3446  
 E-Mail: ridner@cnea.edu.ar

- 2.3 Hydrographic Mapping  
 SERVICIO DE HIROGRAFÍA NAVAL (Address on cover)  
 Nautical Charts - New Editions:
- Title: San Martin (in preparation)  
 Code: INT 9111  
 Projection: Mercator  
 Scale: 1: 25 000  
 Latitude Range: - 68<sup>0</sup> 04' to - 68<sup>0</sup> 14'  
 Longitude Range: - 67<sup>0</sup> 33' to - 68<sup>0</sup> 55'
- Title: Isla Decepción (in preparation)  
 Code: INT 9120  
 Projection: Mercator  
 Scale: 1: 50 000 (with 1:12 500 inset)  
 Latitude Range: - 62<sup>0</sup> 50' to - 63<sup>0</sup> 06'  
 Longitude Range: - 60<sup>0</sup> 22'to - 61<sup>0</sup> 00'

Title: (Gerlache area - in preparation)  
Code: INT 9156  
Projection: Mercator  
Scale: 1: 150 000  
Latitude Range: - 63° 20' to - 64° 18' 03"  
Longitude Range: - 60° 07' to - 63° 49' 30"

### 3. SCIENTIFIC PAPERS PUBLISHED / PRESENTATIONS

SCHÖNE T., SCHENKE H.W., POHL M., WONNACOT, ZAKRAJSEK A. (1998) "Permanent GPS Tracking Network in the South Atlantic". 1<sup>st</sup> Antarctic Geodesy Symposium, Santiago, Chile.

ZAKRAJSEK A.F., A. PERETTI (1998) "Geodetic Monumentation in Antarctic Permafrost, MARAMBIO (Seymour) Island". 1<sup>st</sup> Antarctic Geodesy Symposium, Santiago, Chile.

Papers in "Berichte zur Polarforschung 299'98", (AWI):

MÜLLER, CH., A. ECKSTALLER, W. JOKAT, A.F. ZAKRAJSEK. (1998). Seismological Observations at Jubany/Dallmann. (pp. 4-8)

POHL, M., T. SCHÖNE, A.F. ZAKRAJSEK, H.W. SCHENKE (1998). GPS Observations at Jubany/Dallmann (pp. 9-11)

SCHÖNE, T., M. POHL, A.F. ZAKRAJSEK, H.W. SCHENKE (1998). Tide Gauge Measurements - A Contribution for the Long Term Monitoring of the Sea Level (pp. 12-14)

SCHÖNE, T., H.W. SCHENKE, J. FIERRO, A. ZAKRAJSEK (1999). Genauigkeit globaler Geoidmodelle im Gebiet der Antarktischen Halbinsel. GAP98 Seminar, Dresden, May 1999.

ZAKRAJSEK, A. (1999) Argentine Participation in Antarctic Surveying Activities from 1901 to 1999: an overview. 2<sup>nd</sup> Antarctic Geodesy Symposium, Warsaw, July 1999.

PICASSO M.H., SALGADO H., LORENZO B. (1999) "Monitoreo de Hielo Marino". Proceedings of Globesar2 Final Symposium, May 1999, Buenos Aires, Argentina.

SALGADO H. (1999) "Actualización de cartografía náutica antártica". Proceedings of Globesar2 Final Symposium, May 1999, Buenos Aires, Argentina.

PICASSO M.H., SALGADO H., LORENZO B. (2000) "Experiences with visual SAR Images interpretation for floating ice in support to Antarctic marine activities". Map and archiving data of Sea Ice Congress, May 2000, Ottawa, Canada.

SALGADO H. "Antarctic cartography updated with RADARSAT images" (submitted to Canadian Journal of Remote Sensing - February 2001)

### 4. COMPOSITE GAZETTEER OF ANTARCTICA

Status:

"A" through "G" entries completed at SHN, "H" entry is being composed.

"A" through "E" entries were made available to Italy, however, from "B" onwards the gazetteer is being reformatted at SHN for consistency with PNRA/Rome working tools.

Contact: Maria Cristina MORANDI

SERVICIO de HIDROGRAFÍA NAVAL (Address on cover)