

GeoReach

Newsletter from the
SCAR Geoscience Standing Scientific Group



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From the CO's Desk

Dear Geoscience Antarcticans,

The big events since the last GeoReach were ISAES (International Symposium on Antarctic Earth Sciences) and AGS'03 (Antarctic Geodesy Symposium 2003) in September. In Potsdam I was overwhelmed by the amount of great science going on in Antarctica. I was also really pleased by the way the number of international cooperative projects within Antarctic earth sciences keeps growing.

This trend is really great, not just for the way bigger, better resourced projects emerge but for the way such projects strengthen the day to day links within the Antarctic community.

A series of new projects were started in Potsdam, spurred on by the IPY steering committee. I would encourage everyone to look seriously at the various proposals for International Polar Year projects to see how they might contribute. I would also encourage those already involved to see how they can involve the maximum number of nations and institutions in their proposals. I would like to thank all those who came to the SG meetings prior to the main symposium in Potsdam and took time to talk to me about SCAR issues during the meeting. I appreciate the time and thought people have put into the issues discussed.

AGS'03 was a smaller, highly focused gathering that was equally successful as ISAES. Our colleagues in Ukraine ran a well organized meeting and wonderful social events and tours of L'viv and surrounds during breaks in geodesy. The close focus of the meeting was particularly valuable for meeting people and developing new initiatives. I learned a lot about geodesy (starting from a very low base) and the need for communication between disciplines. Geodesy provides tools we all use but do not always understand the limitations and the science behind the GPS numbers we take as an absolute truth.

The next big issues for me will be the Bremen SCAR meeting and the Acoustics Action Group. Marine acoustics are a hot political issue in Australia and other places so I ask again that everyone involved in marine work read the SCAR report and take its recommendations seriously. I hope the new Action Group will be constituted in the next few months. For Bremen, we will need conveners to look after themes in the science symposium. We will be asking people personally soon.

Finally, I hope those going south this season have a safe and productive time.

Cheers

Phil O'Brien
Chief Officer

GIG News

Summary from ISAES meeting, Potsdam, Germany, September 2003

The 9th ISAES meeting was successfully held at the University of Potsdam, Germany between 8-12th September. The 330+ participants from 26 countries, listened to more than 160 papers and saw 215 posters during the week. It was particularly good to see a number of countries represented at the meeting who have been unable to make it to previous symposia (eg. Ecuador, the Czech Republic, Ukraine and Bulgaria).

The organisation committee did an excellent job with the programme and the venue. One aspect that a lot of participants commented on was the success of the poster sessions – this was mainly due to the availability of high quality, locally produced and most importantly, free beer. This encouraged people to spend more time in the poster hall and talk with the authors. The [list of posters presented](#) is available from the ISAES web site.

The main focus of the symposium was Antarctic contributions to global earth science and judging from the high quality and number of presentations made there is indeed much that Antarctica can contribute to the overall global picture.

There were many 'out of hours' workshops and side meetings conducted including East-West Antarctic Tectonics and Gondwana Breakup, ANDRILL Science Committee Meeting, Permafrost Action Group, Antarctic Seismic Data Library System, and SCAR ANTEC and GSSG meetings.

Other matters of interest discussed during the symposium included the International Polar Year 2007-08 which is described in more detail later in the newsletter.



Next ISAES meeting

The USA has offered to host the next meeting in July 2007. The venue and exact dates have yet to be confirmed. The venue will either be in New York or Santa Barbara, California.

Summary from GSSG meeting, Potsdam, Germany, September 2003

SCAR Executive meeting in Brest

Alessandro Capra spoke about the SCAR Executive meeting in Brest which he had attended, in place of Phil O'Brien who was unable to make it. It was a constructive meeting and the general sentiments echoed that it was very useful to have all SSG Chief Officers (or their representatives) contributing to the discussion. The SCAR Executive were pleased with the status reports each SSG delivered.

A draft report of the meeting was discussed at length. Highlights include:

- A meeting of the SCAR Executive was held in early September 2003 to decide upon the new SCAR Executive Director. It is expected that a public announcement of the successful applicant will be made in the next few weeks. Funding for the position will come from SCAR for the first 2 years. After that it is expected the incumbent will secure his own funding.
- Switzerland and Bulgaria are proposing to apply for Full Membership of SCAR, Malaysia is expected to apply for Associate Membership.
- The success of GSSG's Communication and Outreach Action Group was noted and the Executive would like to see the other SSG's adopt a similar programme.
- Of the 5 proposals received for Scientific Research Programmes (SRP) the Executive recommended that 3 (ACE, SALE and Evolutionary Biology of

Antarctica) should be accepted. The other 2 require some further work and may be resubmitted by December 2003. ACE may have to change its name to CACE (Cenozoic Antarctic Climate Evolution) to avoid confusion with other ACE programmes)

- The deadline for submission of SRP proposals is December 2003, with the SCAR Executive set to discuss these at the Delegates meeting in Bremerhaven in October 2004.
- XXVIII SCAR Science meeting – plans are progressing well. The deadline for abstracts is 15 January 2004. See separate section in this report for further details.
- XXIX SCAR science meeting will be held in Hobart, Australia. The location of the Delegates Meeting has yet to be determined – somewhere in Australia.
- XXX SCAR – nominations have been received from Finland, Russia and Uruguay
- SCAR Fellowship programme – 5 fellowships have been awarded, 2 of which are in the geosciences field. It is expected that a public announcement of the successful Fellows will be made once all the unsuccessful candidates have been informed.

The final version of the report will be available soon through the 'Members' section of the SCAR web site.

ADMAP and WDMAM

The relationship between the Antarctic Digital Magnetic Anomaly Project ([ADMAP](#)) and the World Digital Magnetic Anomaly Map (WDMAM) project was discussed.

XXVIII SCAR meeting, Bremen

The meeting spent some time discussing the various Geoscience themes for the Open Science meeting in Bremen next year. The GSSG Chief Officer has a list of the major themes that were discussed.

We also discussed the 'key note' addresses for each of the sessions. Each program (ie. GSSG, LSSSG, PSSSG) will have an opportunity to present a major key note address. Erik Ivins (Canada) was proposed as the major key note speaker for GSSG, however, this has yet to be confirmed. There are 2 other open science sessions where there can be 'minor' key note addresses given -

Information on the themes will need to be distributed to all GSSG members as soon as possible so they can start planning the submission of abstracts (due 15 January 2004).

International Polar Year 2007-08

The [ICSU IPY Planning Group](#) wants to endorse exciting science projects (ie. those which require a compelling scientific objective) and encompass research being conducted at both poles.

CACE is a likely contender for the IPY 'stamp of approval'. Another idea is to do a possible bi-polar Geophysical Observatories project (ie. Extending the network of permanent geodetic, meteorological, seismic and geomagnetic stations, utilising remote technologies).

GSSG members are asked to consider any possible projects for IPY endorsement and to let the GSSG Chief Officer know before these are submitted to the IPY Planning Group.

IPY 2007-08 was also discussed in the main ISAES symposium – see below for further details.

Summary from IHO meeting, Monaco, September 2003

The 3rd Meeting of the International Hydrographic Organisation (IHO) Hydrographic Committee on Antarctica (HCA) took place in the IHO Conference Room on 8-10 September 2003. Attendees were welcomed by Vice Admiral Alexandros Maratos, IHO president.

He made special mention of the planned International Bathymetric Chart of the Southern Ocean (IBCSO) Project, the under going project for updating IHO publications S-55 that would include area covered by S-59, and the IHO study on the Status of Hydrography and Cartography in remote areas, including Antarctica, which was submitted to NAV49.

Rear Admiral Kenneth Barbor, IHO Director, mentioned the need to foster Electronic Navigation Chart production in Antarctica for use on Electronic Chart Display and Information System (ECDIS), and the necessary cooperation with Industry.

Captain Hugo Gorziglia, IHO Director and Chair of HCA, made special mention of Poland, represented at HCA for the first time. He stressed the need for HCA members to be more active, stated that HCA/3 was held back to back with

Capacity Building Committee (CBC)/1 to facilitate attendance at both meetings, and mentioned the IHO presentation to Antarctic Treaty Committee Meeting (ATCM) 26, early this year.

Minutes of the meeting can be found at the IHO web site:
www.iho.shom.fr/REG_HYD_COM/REG_HYD_COM.htm#AHC

Further KGIS work funded

Finally our project proposal related to Antarctic Spatial Data Management has been approved by our National Research Foundation. The project will run for one year.

IPG Freiburg has received grants to continue with the SCAR King George Island GIS (KGIS) project and to contribute to the SCAR spatial data management project. The one year project is funded by Deutsche Forschungsgemeinschaft (German Research Foundation). Main goals of the project are to contribute to the further development of the SCAR Feature Catalogue and to link KGIS data into the Cybercartographic Atlas of Antarctica.

[Thanks to Steffen Vogt for this contribution]

Cybercartographic Atlas Symposium, Ottawa, 2003

The Cybercartographic Atlas of Antarctica Project (CAAP) held a workshop in Ottawa, Canada from 14-17 October. Progress was made in a number of project areas. An overall progress report on CAAP was supplemented by reports from several members of the Geographic Information Group (GIG) of specialists and the Joint Committee on Antarctic Data Management. An updated conceptual framework for CAAP was presented to compliment the technical strategy outlined at the 2nd International Antarctic GIS workshop held at IPG Freiburg earlier this year.

A number of other workshop objectives were achieved including the establishment of a strategy for participation by international partners and concrete development of a content module reporting life sciences research led by Argentina.

The meeting was concluded by an international conference call (ARG, AUS, CAN, GBR, GER, USA, SCAR-GIG). During the call, the results of the workshop were reviewed with members of the GIG. A number of other business items were discussed including short-term objectives for the group and the potential for a workshop preceding

SCAR XXVII in Bremen. Details about the meeting can be found at <http://www.carleton.ca/gcrc/caap>.

[Thanks to Peter Pulsifer for this contribution]

ANTEC News

No information received for this newsletter.

AGEANT News

No information received for this newsletter.

ACE News

The full ACE proposal was submitted to the recent SCAR executive committee meeting in Brest. The plan received positive comments and the proposal appears in good shape for 'official' submission of the proposal for next year's SCAR meeting in Bremen. The proposal was written by the Scientific Programme Planning Group in conjunction with a number of scientists, including Peter Barrett (Victoria University, New Zealand), Alan Cooper (Stanford University, USA), Michael Hambrey (University of Wales, Aberystwyth), David Sugden (University of Edinburgh), David Pollard (Penn. State University), Rainer Gersonde (AWI), Jane Francis (University of Leeds), Gary Wilson (University of Otago), David Harwood (University of Nebraska, Lincoln), Andris Moldonado (University of Granada) and Antony Payne (University of Bristol).

In August, the inaugural S.T. Lee Lecture at Victoria University of Wellington, New Zealand, was presented by Professor Robert Dunbar, of the Department of Geological and Environmental Sciences at Stanford University. Entitled Antarctica and Climate Change in the Century Ahead: Causes, Consequences, and Surprises, the lecture explored global climate connection, methods of modelling future climate changes, and the effects of climate volatility such as mega droughts and flooding. During his stay as Visiting Lecturer, Professor Dunbar met with the Ministry for the Environment, as well as students and staff at Victoria, to raise the profile of Antarctic climate research.

A full session at the Fall AGU has been organised over the summer by Antony Payne and Rob DeConto, entitled "Evolution of the Antarctic Climate System: Modelling and Observation". The aim of this session is to provide a forum for the comparison of modelling results with the

observational record of the evolution of the Antarctic climate system (ACS). It will be open to contributions focusing on a range of timescales from the events of the last deglaciation (approximately 21,000 years before present onward) to the long-term evolution of the continent since the inception of continental-scale ice sheets in the Oligocene (approximately 35 million years). We hope to include contributions on all of the major components of the ACS, from both the modelling and observational perspectives. We will therefore aim to include recent results on the evolution of the region's ice sheets and shelves; oceans and sea ice; atmosphere; lithosphere; and marine and terrestrial biosphere. The session will also provide a focus for discussions on the proposed Scientific Committee on Antarctic Research (SCAR) research program on Antarctic Climate Evolution.

[Thanks to Martin Siegert for this news]

ADMAP News

The relationship between the Antarctic Digital Magnetic Anomaly Project ([ADMAP](#)) and the World Digital Magnetic Anomaly Map (WDMAM) project was discussed at the GSSG meeting in Potsdam.

Dr Juha Korhonen from Finland has been appointed informal co-chair of WDMAM and he gave a presentation on the current status of the project. (Prof Colin Reeves from ITC Delft is the other co-chair)

WDMAM is being undertaken by the [International Association of Geophysics and Aeronomy \(IAGA\) Division 5](#). The aim of the project is to source, collate and integrate magnetic anomaly data from around the globe. Some work has already been done by ITC Delft in compiling a global index of aeromagnetic data. There is, however, much more to be done. Dr Korhonen is interested in working with the ADMAP group to provide the Antarctic component of the WDMAM.

Dr Korhonen noted that there are many issues surrounding access to data, data quality and data storage. These are exactly the type of issues that have been identified by a number of SCAR groups including GIANT, Geographic Information and JCADM. Glenn Johnstone mentioned there are a number of other international groups such as the Global Mapping initiative (Japan) and the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) which have developed policies – particularly in relation to the sharing or access to data. Glenn undertook to

email Juha Korhonen information about data sharing policies adopted by these groups.

ADMAP as a group, has been quiet for the last few years, since the publication of the map in 2000. Concern was voiced that the location of some datasets is unknown, as well as poor or non-existent metadata records for the line data that does exist.

From discussion around the table and out of session it seemed as though there was enough interest and former ADMAP members at the meeting who would like to 'resurrect' ADMAP. Further information about ADMAP and its members can be found on the GSSG web site at: www.geoscience.scar.org/admap/

Outcome: That ADMAP becomes an Expert Group of SCAR GSSG – chaired by Dr Marta Ghidella (Argentina). This will be formalised at XXVIII SCAR and will get started immediately.

Permafrost News

Wayne Pollard from Canada, Chair of the Permafrost Action Group (PAG) has provided an update on the membership, background, aims and workplan of PAG.

Members: [Ross Powell](#) (Northern Illinois University, USA), [Jan Boelhouwers](#) (Uppsala University, Sweden) IPA, [Warren Dickinson](#) (Victoria University, New Zealand), [Junko Mori](#), (Hokkaido University, Japan), [Enrique Serrano](#), (Universidad de Valladolid, Spain), [Ron Sletten](#), (University of Washington, USA)

Background:

- Permafrost (ground that remains below 0°C for a minimum of 2 years) underlies approximately 25% of the Earth's land surface, including the Arctic and Antarctic. Permafrost and periglacial processes play an important role in the evolution of Antarctic landscapes not covered by glacier ice. Some aspects of Antarctic permafrost are potentially different from its Arctic counterpart, including its age, the nature and age of ground ice, active layer processes, etc. However, permafrost research in Antarctica has been uncoordinated and lacking focus, and in many cases has been undertaken as a component of other research activities.
- [International Permafrost Association \(IPA\)](#) has proposed to become "the relevant body advancing permafrost science in the Antarctic region". In 1998 the IPA created a working

group to address questions about permafrost and periglacial processes in the southern hemisphere (IPA Southern Hemisphere Working Group) and in 2003 reconstituted it as the Working Group on Permafrost and Periglacial Processes in Antarctica.

- There is a need to link permafrost research with other scientific activities on Antarctic geology, climate change and environmental management.
- In response to these issues the Geoscience Standing Scientific Group (GSSG) established the Permafrost Action Group (PAG).

Aims:

1. To assess (review) the state of permafrost science in Antarctica.
2. To identify gaps and priorities in Antarctic permafrost science.
3. To establish links with the broader permafrost community (particularly the International Permafrost Association) and put Antarctic permafrost into a global context.

Workplan

1. To constitute a small group of permafrost specialists including GSSG members (W. Pollard and R. Powell), an IPA representative (J. Boelhouwers), plus other members of the Antarctic permafrost research community
2. To liaise with the IPA Southern Hemisphere Working Group (SHWG) including participation in the [8th International Permafrost Conference](#) in Zurich and the IPA SHWG workshop on Antarctic Permafrost Issues
3. Organisational meeting of the Permafrost Action Group at the [9th ISAES](#) in Potsdam
4. Establish contact with permafrost representative from SCAR countries
5. Create a directory of Antarctic permafrost researchers
6. To prepare an action paper identifying Antarctic permafrost issues to be delivered at [SCAR 2004 in Bremen](#)
7. Organise a permafrost workshop or session on Antarctic permafrost in association with SCAR 2004 in Bremen

[Thanks to Wayne Pollard for this news]

Other News

West Antarctic Ice Sheet Meeting

The 10th annual [WAIS'03 workshop](#) was held at Algonkian Meeting Center in Sterling, Virginia, USA from September 17-20. Abstracts and some Powerpoint presentations are available from the web site.

Peru and the Antarctic

A 2 day Antarctic seminar in Lima, Peru is being held on 10-11 November. The seminar, organised by Instituto Antartico Peruano ([INANPE](#)), will be focussing on the present situation and prospects of Peruvian Antarctic research. There will be discussion on the following topics:

- Ocean sciences
- Earth sciences
- Atmospheric sciences
- Environmental sciences
- Life sciences
- Engineering and technology

If anyone is interested in further information please contact either [Mr Domingo Espinoza](#) or Glenn Johnstone.

SCAR funding for 2003

Anyone who has not received and spent their requested funding from SCAR please contact Phil O'Brien as soon as possible - with a letter requesting the money to be forwarded to them from SCAR.

International Polar Year 2007-08

"The 125th, 75th, and 50th anniversaries of the first two International Polar Years (IPYs) and the International Geophysical Year (IGY) will occur in 2007-2008. These milestones have the potential to spark exciting new polar science and research, both engaging the next generation of scientists and illustrating to the public the benefits and challenges still inherent in polar exploration."

The ICSU IPY Planning Group is being chaired by Prof Chris Rapley (UK) and vice chair is Prof Robin Bell (USA).

Further details about IPY 2007-08 can be found at: <www.ipy.org/>

GSSG Representation

Welcome to a number of new members of the GSSG:

- Ms Essy Santana - Armada del Ecuador Instituto Oceanográfico (INOCAR), Ecuador
- Mr Adrian Fox – British Antarctic Survey, UK
- Captain Hugo Gorziglia – International Hydrographic Office, Monaco
- Mr Hiroshi Une – Geographical Survey Institute of Japan, representing the International Steering Committee for Global Mapping
- Dr Martine Amalvict – Ecole et Observatoire des Sciences de la Terre (EOST), France
- Mr Jean-Jacques Leveque – EOST, France
- Mr René-Pierre Menot – Université Jean Monet, France
- Mr Jean-Robert Petit – Université Joseph Fourier, France

Contact details for each of these new members can be found at:

www.geoscience.scar.org/scarmemb.htm

Congratulations to Jerry Mullins, USGS, on his promotion to Chief, Polar Regions in the Geology Division of USGS. This means that Mr Mullins will be responsible for USGS polar geological activities for both the Arctic and Antarctic.

State of the Environment winner

A web-based State of the Environment reporting system developed by the Australian Government's Antarctic Division (AAD) has won a prestigious Technology Productivity Award.

The computer system known as System for Indicator Management and Reporting (SIMR) took out a Government Technology Productivity Silver Award

Our congratulations to Lee Belbin and his team at the AADC. More information at:

www.aad.gov.au/default.asp?casid=12330

Upcoming meetings

- [Fall AGU meeting](#) in San Francisco, 8-12 December, 2003
- SCAR GSSG meeting (including meetings of the Geospatial Information Group and a joint meeting with JCADM) in Bremen, Germany, 23-25 July, 2004

- [SCAR Open Science Symposium](#), in Bremen, Germany, 25-31 July, 2004
- [32nd International Geological Congress](#) International Union of Geological Sciences, 20 - 28 August 2004, Florence, Italy
- International Symposium on the Geology and Geophysics of the Southernmost Andes, the Scotia Arc and the Antarctic Peninsula ([GeoSur 2004](#)), Buenos Aires, 22-23 November 2004

Next Edition

We would ask for your contributions to the next edition on:

- News items
- Field work/workshop reports
- Reports from leaders of Action Groups, the Expert Group, Scientific Research Programmes and Scientific Programme Planning Groups
- Diary events

Details should be sent to Glenn Johnstone <glenn@glennjohnstone.freemove.co.uk>.

The deadlines for contributions to the editions for this year are as follows:

- Vol. 3 No. 1 - Monday 26 January 2004
- Vol. 3 No. 2 - Monday 29 March 2004
- Vol. 3 No. 3 - Monday 9 August 2004
- Vol. 3 No. 4 - Monday 1 November 2004