“Antarctica and the Southern Ocean in the Global System”.

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<thead>
<tr>
<th>Session Title</th>
<th>oral</th>
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<td><strong>Plenary</strong></td>
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<td>Physical Sciences SSG Sub-Plenary</td>
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<td>Life Sciences SSG Sub-Plenary</td>
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<td>Geosciences SSG Sub-Plenary</td>
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<td>Variability and change in the Antarctic biota: molecules to ecosystems</td>
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<td>Pelagic predators and the Southern Ocean system</td>
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<td>Structure &amp; function of Southern Ocean ecosystems</td>
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<td>Evolution and biodiversity of life in polar regions</td>
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<td>Ecology of the Antarctic sea ice zone</td>
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<td>Human responses to the Antarctic environment</td>
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<td>Ocean-atmosphere-land interactions</td>
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<td>Climate history of the Antarctic from ice cores and meteorological reports</td>
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<td>Astronomy from the Antarctic</td>
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<td>Arctic-Antarctic conjugacy in solar terrestrial physics</td>
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<td>Evolution of the Antarctic and Southern Ocean climate and biota: the geological record</td>
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<td>Antarctic neotectonics and geodesy</td>
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Convenor: Alessandro Capra, Polytechnic of Bari, IT, Terry Wilson, The Ohio State University, US and Anya M. Reading, Australian National University, AU
Tuesday afternoon, Wednesday morning, Wednesday afternoon
Poster session: Tuesday

Growth of the Antarctic continent
Convenor: German Leitchenkov, Institute of Ocean Geology (VNIIOkeangeologia), RU and Georg Kleinschmidt, University of Frankfurt, GE
Wednesday morning
Poster session: Wednesday
Antarctic permafrost
Convenor: Jerónimo López-Martínez, University of Madrid, ES and Wayne Pollard, McGill University, CDN
Tuesday afternoon
Poster session: Tuesday

Geospatial information, data management and information portals: Management & application in science
Convenor: Dean Peterson, Antarctica New Zealand, NZ and John Manning, Geoscience Australia, AU
Tuesday afternoon, Wednesday morning
Poster session: Tuesday

Ozone, aerosols and atmospheric composition
Convenor: Takashi Yamanouchi, National Institute of Polar Research (NIPR), JP and Sukhmal Jain, National Physical Laboratory, IND
Tuesday afternoon
Poster session: Tuesday

Physical oceanography and sea ice
Convenor: Eberhard Fahrbach, Alfred Wegener Institute for Polar and Marine Research (AWI), DE
Wednesday morning, Wednesday afternoon
Poster session: Wednesday

Upper atmospheric physics and geospace
Convenor: Maurizio Candidi, Institute of Atmospheric Sciences and Climate, IT
Wednesday morning
Poster session: Wednesday

Subglacial lakes exploration
Convenor: Robin Bell, Lamont-Doherty Earth Observatory, US, Martin Siegert, University of Bristol, UK and Mahlon C. Kennicutt II, Texas A&M University, US
Wednesday morning
Poster session: Wednesday

Bathymetry of the Southern Ocean
Convenor: Hans-Werner Schenke, AWI, GE
Tuesday afternoon

Ice mass ITASE (only poster)
Convenor: Paul Mayewski, University of Maine, US
Thursday Business meeting: Symposium on Ice mass ITASE
COMNAP

XI SCALOP Symposium 28 July 2004

National Display of Antarctic Programmes 26 – 30 July 2004

XI SCALOP Symposium: Towards the International Polar Year and Beyond

The Standing Committee on Antarctic Logistics and Operations (SCALOP) of the Council of Managers of National Antarctic Programs (COMNAP) convenes the XI SCALOP Symposium to be held in conjunction with the COMNAP XVI meeting at the Congress Centre, Bremen, Germany on 28 July 2004.

Oral and poster presentations will cover the following topics:

- New Transportation Technologies and Applications.
- Technology to Enable Science.
- Technology to Reduce Environmental Impact.
- Ergonomic issues related to polar work.
- Latest developments in energy storage.

Keynote speakers are invited for special subjects of interest such as space and polar research and ergonomic issues related to polar operations.

The SCALOP Symposium Steering Committees will review abstracts submitted for oral and poster presentations end of April 2004. Notification of acceptance will be sent electronically by 15 May 2004. All accepted abstracts will be published in a special issue of the journal “Terra Nostra” issued by the GeoUnion Alfred-Wegener-Stiftung.

XI SCALOP Symposium Proceedings

All oral and poster contributions of the XI SCALOP Symposium will be published as “XI SCALOP Symposium Proceedings” in a special issue of the journal “Terra Nostra” by the GeoUnion Alfred-Wegener-Stiftung. The print-ready manuscripts have to be submitted as word and pdf files copied on CD at the beginning of the conference to the SCALOP Symposium organizer.
The formatting should be as follows:

- Page margin settings: 2.5 cm left, 2.0 right, 2.5 cm above, 2.5 cm below
- Font: Times New Roman
- Font size: title (18 bold), author/organisation (12 bold), subsection title (14 bold), text (12; line spacing 1.5)
- Figures and pictures black and white only.

For further information about the XI SCALOP Symposium and submission of print-ready manuscripts, please visit the homepage: http://www.comnap16.org

**National Display**

As a subsidiary event displays of national Antarctic operating agencies will be arranged at the Congress Centre, Bremen, Germany from 26 to 30 July 2004.

All COMNAP members will present up to three posters on their national activities and logistic facilities. The poster size should not exceed 120 cm height and 85 cm width.

Poster boards are available for all national operators.

Confirmation is requested by 31 May 2004 to secretary@scar28.org

**COMNAP/SCALOP**

**Aircraft for polar research joins XVI COMNAP meeting 26 – 30 July 2004**

Firstly in the history of COMNAP/SCALOP meetings scientists and operators will get the opportunity to visit an aircraft operated for polar research and logistics.

**AIRCRAFT FOR POLAR RESEARCH**

The Australian Antarctic Division (AAD) is going to operate a new CASA 212 aircraft in the frame of its Antarctic activities.

For about 20 years the Alfred Wegener Institute for Polar and Marine Research (AWI) successfully operates two Dornier 228 aircrafts. Flight missions contribute to
geophysical, glaciological and atmospheric sciences.

On the occasion of the XVI COMNAP/SCALOP meeting both aircrafts the CASA 212 and Dornier 228 (Polar 4) can be visited at the regional Luneort airport (www.flughafen-bremerhaven.de) close to the city of Bremerhaven, where AWI’s aircrafts are based. The aircrafts are jointly operated by the AWI and Optimare Sensorsystem AG (www.optimare.de).

At the Luneort airport the AWI and Optimare Sensorsysteme AG have established all facilities for maintenance and service of the scientific mission equipment of the Dornier 228 aircraft. There will be a demonstration of this instrumentation and of selected scientific applications together with the aircraft.

JOINING THE POLAR AIRCRAFT FAMILY

The aircraft presentation currently arranged by AAD and AWI welcomes further participants. Operators of polar aircrafts are kindly requested to check this exceptional opportunity for coming together during the XVI COMNAP/SCALOP meeting. For arrangements please contact:

Dr. Hartwig Gernandt (Local Organizing Committee)
Email: hgermandt@awi-bremerhaven.de

and

Dr. Martina Kunz-Pirrung (Scientific secretary)
Dr. Manfred Reinke (Scientific secretary)
Email: secretary@scar28.org

DETAILS FOR VISITING THE AIRCRAFT PRESENTATION

The aircraft presentation is scheduled for 26 – 30 July 2004 at the regional Luneort airport (Bremerhaven). A shuttle bus will be available every day on demand of the meeting participants. This shuttle service will be arranged by Optimare Sensorsysteme AG.

Pre-registrations for the aircraft presentation should be addressed to secretary@scar28.org.

For final confirmation and further details please contact directly the Optimare booth at the Industrial Exhibition upon your arrival at the meeting venue.

COMNAP
Industrial Exhibition 26 – 28 July 2004

Engineering and Technology Meet Antarctic Science and Operations

In parallel to the XXVIII SCAR and COMNAP XVI meeting, the Council of Managers of National Antarctic Programs (COMNAP) together with the national organizers of the XXVIII SCAR and COMNAP XVI meeting invite to an Industrial Exhibition on “Engineering and technology meet Antarctic science and operations” at the Congress Centrum Bremen, Germany, 26-28 July 2004.

COMNAP and SCAR in conjunction with international bodies such as the World Meteorological Organization (WMO) address the direct interaction with companies and agencies for promoting their products and services. Scientific Standing Groups (SSG), sub-groups as well as Expert Groups of SCAR will address matters on longer time scales and develop new challenging research programs on geosciences, life sciences, and physical sciences.

The Industrial Exhibition provides an ideal platform to offer latest and proved techniques, instrumentation, transportation facilities, support services, and technologies appropriate for Antarctic operations and science to the SCAR and COMNAP community. It is the largest and most efficient gathering between industrial providers and users as well as decision makers in the field of Antarctic research and operations.

For further information and arrangements about the Industrial Exhibition, please visit the homepage: http://www.comnap16.org
or contact
Congress Partner GmbH
Christine Kudla or Annette Gleich
Birkenstr. 37, 28195 Bremen, Germany
Tel. /Phone: +49 (0) 1805 052 612, Fax /fax: +49 (0) 1805 052 614
E-mail: scar@cpb.de

Structure of the meeting

XXVIII SCAR
Sunday, 25 July 2004:
Registration 12.00-18.00
13.00-17.45: SSG Business Meetings: Physical Science, Geoscience and Life Science
19.00-22.00: Icebreaker Party in the “Übersee-Museum”

Monday, 26 July 2004:
SCAR Open Science Conference
09.30-11.00: Official Opening Ceremony for SCAR, COMNAP and the Industrial Exhibition.
11.00-16.45: SCAR Symposium “Antarctica and the Southern Ocean in the Global System”
Keynote speaker only
18.00-19.30: Open Door Industry Exhibition
19.30-20.30: Public Talk (in German)

Tuesday, 27 July 2004:
SCAR Open Science Conference
08.30-12.00: Symposium of the Standing Scientific Group
Keynote speaker only
13.30-17.10: Parallel sessions
17.15-18.45: Poster session I in Hall 4.1
20.00-22.00: Reception at the "Universum"

Wednesday, 28.07.04:
SCAR Open Science Conference
08.30-16.50: Parallel sessions
16.50-18.20: Poster session II in Hall 4.1
19.00-20.00: Reception in the Bremen City Hall
20.00-22.30: SCAR Dinner

Thursday, 29 July 2004
SCAR Business meetings
8.00-9.00: Panel discussion on International Polar Year
Convenor: Chris Rapley

Business meetings:
• Paul Mayewski (Univ. of Maine), US: Symposium on Ice mass ITASE. Posters only; Poster session on Wednesday
• Takashi Yamanouchi (NIPR), Japan: Workshop of the Antarctic tropospheric aerosols and their role in climate (ATAC).
• John Storey (Univ. of New South Wales), AU: Meeting of the astronomy action and expert groups.
• Terry Wilson (Ohio State Univ.), US & Andrea Morelli (Instituto Nazionale di Geofisica e Vulcanologica), IT: ANTEC Business meeting
• Dean Peterson (Antarctica New Zealand), NZ: JCADM
• Phil O'Brien (Geoscience Australia), AU: Geoscience Business Meeting
• Steven Chown (Univ. of Stellenbosch), SA & Ad Huiskes (Netherlands Institute of Ecology), NL: Life Science Business Meeting
• Hans-Werner Schenke (AWI), GE & Reinhard Dietrich (Univ. of Dresden), GE: Antarctic Geodesy Symposium (AGS'04): Reports and Planning
• STEPS, MADREP, APTIC, ICESTAR
• Human Biology & Medicine
• A meeting of the Antarctica and the Global System PPG

Friday, 30 July 2004
SCAR Business meetings
8.00-9.00: Panel discussion on International Polar Year
Convenor: Chris Rapley

Business meetings:
• John Turner (BAS), UK: Physical Science Business Meeting
• Phil O'Brien (Geoscience Australia), AU: Geoscience Business Meeting
• Steven Chown (Univ. of Stellenbosch), SA & Ad Huiskes (Netherlands Institute of Ecology), NL: Life Science Business Meetings
• Dean Peterson (Antarctica New Zealand), NZ: JCADM
• Hans-Werner Schenke (AWI), GE: International Bathymetric Chart of the Southern Ocean (IBCSO) Business meeting
• Workshop: Advances in Airborne and Spaceborne Mapping Technologies and GIS: Applications to Antarctic Research
• Workshop: Enabling Technologies for Remote Geophysical Observatories: Status and Requirements for Continent-Wide Deployments
• Human Biology & Medicine

Saturday, 31 July 2004
SCAR/COMNAP Excursion

COMNAP XVI
Sunday, 25 July 2004:
Registration 12.00-18.00
14-16.00: EXCOM Meeting
19.00-22.00: Icebreaker Party in the “Übersee-Museum”

Monday, 26 July 2004:
SCAR Open Science Conference
09.30-11.00: Official Opening Ceremony for SCAR, COMNAP and the Industrial Exhibition.
11.00-16.45: SCAR Symposium “Antarctica and the Southern Ocean in the Global System”
Keynote speaker only
17.00-19.30: Joint COMNAP/ SCALOP Plenary
19.30-20.30: Public Talk (in German)

**Tuesday, 27 July 2004:**
08.30-10.00: SCALOP Plenary
10.30-12.00: MOLIBA, CENMAN & TANGO
13.30-15.10: AIROPS meeting,
   CENMAN/ENMANET Workshop on sustainable energy management
15.30-18.00: CEDAT, ECG & COMED
   CENMAN/ENMANET Workshop on sustainable energy management
20.00-22.00: Reception at the "Universum"

**Wednesday, 28 July 2004:**
XI SCALOP Symposium
08.30-16.50: XI SCALOP Symposium
16.50-18.20: Poster session of the XI SCALOP Symposium in Hall 4.1
19.00-20.00: Reception in the Bremen City Hall

**Thursday, 29 July 2004**
09.00-10.30: SHIPOPS meeting
11.00-12.30: STADM & SYMP meetings
14.00-16.00: COMNAP meeting on the IPY with a few representatives of SCAR/IPY
  Preparing of Working Group reports
16.30-18.30: COMNAP members meeting on the IPY to discuss logistics and
  cooperation for support to IPY
  Preparing of Working Group reports
20.00-23.00: COMNAP/SCALOP Dinner

**Friday, 30 July 2004**
09.00-10.30: EXCOM meeting
11.00-12.30: COMNAP/SCALOP Plenary
14.00-16.00: COMNAP/SCALOP Plenary
16.30-18.30: COMNAP/SCALOP Plenary

**Saturday, 31 July 2004**
SCAR/COMNAP Excursion

**Accommodation**

**Bremen and Bremerhaven**

Reservation of hotels should be made by the participants attending the XXVIII SCAR
and XVI COMNAP/SCALOP Meeting in Bremen and the XXVIII SCAR Delegates
Meeting in Bremerhaven directly through the official travel agent.
Atlantic Travel Service  
-SCAR XXVIII-  
Bgm.-Smidt-Str. 20 A  
27568 Bremerhaven  
Germany  
Phone: 0049 (0) 471-945 91 11  
Fax: 0049 (0) 471-945 92 22  
scar28@atlantic-travel-service.de

Participants are advised to book their accommodation well in advance. The final deadline for the pre-reservation for the XXVIII SCAR & COMNAP XVI Meeting in Bremen will be end of May 2004. Naturally, any reservation received after this date will also be accepted on request; but rates cannot be guaranteed after on.

XXVIII SCAR & COMNAP XVI, Bremen, 25-31 July 2004  
Hotel Rates Single Double  
Maritim 110€ 130€  
Park Hotel 180€ 230€  
Marriott 119€ 129€  
Hilton 153€ 196€  
Intercity Hotel 84€ 96€  
Hotel zur Post 78€ 98€  
Mercure Columbus 82€ 115€  
Tulip Inn Schaper 69€  
Ibis Ostertor 68€ 77€

XXVIII SCAR Delegates Meeting, Bremerhaven, 3-9 October 2004  
Nordsee Hotel 74€ 105€  
Hotel Haverkamp 79€ 110€

All rates are per room and night, including breakfast, service and taxes.

Hotel descriptions, online reservation and reservation forms are available from the SCAR homepage http://www.scar28.org .