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Newsletter



ISSUE 1

JANUARY 2005

President's Message

With the help of Gareth Marshall and John Turner of the British Antarctic Survey, IAMAS is going to begin electronically distributing twice-yearly newsletters. Our thanks to them for taking on this task. Present thinking is to have these newsletters come out in the fall and the spring. In addition to other news, this schedule would utilize the fall issue to distribute information about submission of abstracts for meetings and the spring issue to provide information about the programs at upcoming meetings. We hope that these newsletters will be a useful addition to our Web site for communicating with the scientific community, the IAMAS commissions, IUGG and other associations, and with the IAMAS national representatives. We would welcome your feedback and suggestions—and also submission of articles for upcoming issues.

Program development is the main activity that is underway in preparation for the IAMAS2005 Scientific Assembly in Beijing on 2-11 August. A number of scientists have already registered, and abstracts are starting to come in. Secretary General Roland List has also sent a reminder to the conveners of the various symposia to select and invite their invited speakers and to talk up the meeting among their colleagues. PAGES, whose meeting is being coordinated with and held at the same location as the IAMAS meeting, has just distributed the preliminary program for its

second Open Science Meeting. We are looking forward to this combination of meetings, along with some of our symposia being co-organized by IAHS and the Commission on Snow and Ice, to be very interesting.



Finally, just a note about meetings beyond IAMAS2005. We will be meeting with IUGG on 2-13 July 2007 in Perugia, Italy. Planning for that meeting has already begun, with the overall theme to be "Earth: Our Changing Planet." Suggestions for symposia to be held at that meeting will be invited during IAMAS2005. For 2009, we have agreed to hold a joint scientific assembly with IAPSO (perhaps also with symposia co-organized with other associations), with the dates and site still to be determined.

Best wishes for the New Year, and I look forward to seeing you in Beijing.

Mike MacCracken
(maccrac@comcast.net)



IAMAS 2005

August 2-11, 2005
Beijing, China

See Page 2 for important IAMAS 2005 information

IAMAS 2005

The IAMAS 2005 Scientific Assembly will be held in Beijing, China at the Beijing International Convention Center (BICC) from Tuesday, August 2 through Thursday, August 11, 2005.

IMPORTANT DATES

25 February: Deadline for receipt of abstracts

25 February: Deadline for applications for grants to support attendance at IAMAS 2005

15 April: Notification of grants. Convenors produce programmes for symposia, with session chairs, invited speakers and order of presentations. Decisions on poster/oral presentations and invitations issued.

30 May: Deadline for hotel reservation. Third circular with abstract titles posted on the website.

1 June: Deadlines for early registration and registration for the social programme.

15 July: Deadline for standard registration. Other information currently available at: <http://www.iamas2005.com> includes a guide to Beijing



The Forbidden City: imperial palace during the Ming and Qing dynasties

and information on the venue, programme, organizing committees, sponsors, the planned social activities, FAQs and, of course, local contact details.

Note that visas are required to enter China. An official invitation letter for this application will be sent to those who have returned the Final Registration form.

Additional important information pertaining to arrival, weather, payment and currency exchange can be found at:

<http://www.iamas2005.com/information.htm>

Summary of the International Radiation Symposium 2004, Busan, Korea, August 2004

The International Radiation Symposium (IRS2004) on Current Problems in Atmospheric Radiation was held during August 23-28, 2004 at the Busan Exhibition and Convention Center (BEXCO), Busan, Korea. The Symposium was organized by the International Radiation Commission (IRC, President: Prof. Herbert Fischer), and hosted jointly by the Korean Meteorological Society (President: Prof. Jong-Ghap Jhun) and the Center for Atmospheric Environment Research of Seoul National University (Director: Prof. Dong-Kyou Lee). The Symposium focused on providing opportunities for exchanging advanced ideas and experiences on current problems in atmospheric radiation, and for discussing and reviewing knowledge of spectroscopy, radiative transfer theory and modeling, remote sensing, and weather and climate applications. The Symposium attracted over 300 scientists from 25 countries who presented approximately 370 papers in plenary and poster sessions. A volume of peer reviewed extended abstracts is in preparation. Details concerning many aspects of the Symposium, including a detailed program, may be found at <http://www.irs04.org/>.

The Symposium afforded an ideal opportunity to honor the first recipients of the Commission's new awards, the Gold Medal and the Young Scientist award, which were pre-

sented to Professor Richard Goody of Harvard University and Dr. Tashihiko Takemura of Kyushu University, respectively. The IRC Gold Medal is designed to honour a senior scientist who has made contributions of lasting significance to the field of radiation research. The IRC Young Scientist Award consists of a \$1000 cash award to a young scientist who has made recent noteworthy contributions to radiation studies and is regarded as becoming a leading radiation scientist in the future.

The Symposium also afforded the occasion for the IRC to hold its annual business meeting, the major portion of which was devoted to reports of the various IRC working groups, summaries of which may be found on the IRC web page, <http://www.irc-iamas.org/>.

The next IRC business meeting will be held at the 2005 IAMAS in Beijing, China where a major topic of business will be the presentation of mini-proposals for IRS 2008. Parties interested in proposing to host the IRS 2008 are urged to contact the IRC Secretary, Prof. Robert Ellingson.

Robert Ellingson (bobe@met.fsu.edu)

Summary of the 20th Quadrennial Symposium on Atmospheric Ozone, Kos, Greece, June 2004

The twentieth Quadrennial Symposium on Atmospheric Ozone coincided with the 20th anniversary of the discovery of the springtime Antarctic ozone hole. It also marked two decades of intensified atmospheric monitoring globally and basic research in atmospheric chemistry and physics. The progress in our understanding of the impact of human activities on the chemistry and physics of the global stratosphere since the previous Quadrennial Ozone Symposium was presented among the 690 research papers at the XX Quadrennial Ozone Symposium, held in Kos, Greece, 1-8 June 2004 and attended by 450 scientists from 60 countries. The papers presented and the proceedings of the Symposium can be found at www.QOS2004.gr.

Among important topics discussed at the Symposium were recent research on possible ozone recovery, results from an expanded network of satellites and ground-based stations, ozone-climate interactions, modeling and chemistry, results from monitoring of the global composition of the troposphere from satellites and measurements of UV-B solar radiation reaching ground level.

Evidence was presented that stratospheric ozone in the past few years is a little higher than expected from earlier projections based on sensitivity of ozone to influences of aerosols, halogen compounds and the solar cycle. There may be the beginning of a recovery in ozone levels, an issue that is complicated by changes in meteorology, greenhouse gases and in the radiation balance, not excluding the observed recovery of the ozone layer from its perturbation by the Pinatubo volcanic eruption in the early 1990s. The evaluation of future ozone recovery in a changing climate and the effect of ozone on that climate demonstrated the importance of feedback mechanisms involving water vapour content in a warmer planet.

The need for the continuation of well-calibrated instruments and measurements was discussed extensively and emphasis was given to the use of satellite and ground-based data (example NDSC and the Global Ozone Observing System) to evaluate models and ozone loss and its expected recovery.

Chemistry/climate models presented at the conference addressed the problem of how changes in the meteorology or climate interact with changes in the chemistry of ozone. One problem is how changes in meteorology over the last 25 years may have contributed to observed ozone changes and feedback mechanisms. Models can then be used to extrapolate that knowledge to what may happen in the future with the expected increases in the concentrations of methane, nitrous oxide, and carbon dioxide.

Significant new work that combines satellite and *in situ* observations with model calculations provided insights into the budget of oxides of nitrogen and a range of halogen species, which are indispensable to our understanding of the global carbon and hydrological cycles. Water vapour presents a particularly important challenge. Satellite data, shown at the meeting, are not consistent in trend with previous ground-based data. Understanding the feedback mechanisms between water vapour content, ozone, and polar stratospheric clouds is critical to the evaluation of predictions of ozone in a future warmer global atmosphere.

Significant progress was made in monitoring the tropospheric ozone budget with the development of new observational techniques from satellites, combined with models of tropospheric composition. Long-range transport of tropospheric pollution and its coupling to climate was targeted in a number of studies using climate/chemistry models. Other studies have shown the importance of long-range transport of pollutants to maintain regionally high background levels of tropospheric ozone. For example, satellite and balloon observations reveal that seasonal episodes of high ozone over the south Atlantic begin with pollution sources originating thousands of miles away.

Future UV-B levels for 2000-2019 are projected to decrease for all seasons, but the trends are typically not statistically significant, except during spring over both hemispheres. UV-B trends are mainly caused by the total ozone trends because in the future cloud changes are predicted to be small in the coupled chemistry climate model used to generate these results. Nonetheless, there is a region over western Europe that is predicted to show an increase in UV-B due primarily to a decrease in cloudiness. The complexity of interference of cloud and other physical parameters in influencing UV-B level at ground level was targeted in several papers.

In summary, after a close look at the individual oral and poster presentations of the Symposium, the main conclusion is that the detection of ozone recovery still requires patience. We still have a long way to go to understand the complex system of interactions between ozone and a globally changing environment, and the best tools we have at present are the continuation of high quality global observations both from ground and from space. UV-B levels in the coming decade or so are projected to decrease for all seasons except during spring over high latitudes of both hemispheres.

Christos Zerefos (zerefos@geol.uoa.gr)

Summary of the 14th International Conference on Clouds and Precipitation, Bologna, Italy, July 2004

The 14th International Conference on Clouds and Precipitation was held 19th -23rd July in Bologna, Italy. This was a conference organized by the International Commission on Clouds and Precipitation (ICCP). The first ICCP conference was held in 1954 in Switzerland, so this meeting, which was the largest ever, represents the 50th anniversary. It was attended by 430 scientists from around the world. The Chair of the Program Committee was Dr. George Isaac of the Meteorological Service of Canada, who was also the outgoing President of ICCP. Dr. Sandro Fuzzi, of the Institute of Atmospheric Sciences and Climate in Bologna, was the Chair of the Local Arrangements Committee. Professor Hans Pruppacher was the Honorary Chair of the Conference. There were 538 extended abstracts from 39 countries in the three volumes of the conference, discussing a wide variety of topics, including aerosol and cloud interactions, cloud microphysics, cloud dynamics and cloud modeling.

Clouds remain one of the largest uncertainties in understanding and modeling climate change, and they are not adequately handled in

weather forecasting models either. There are many unknowns regarding our basic knowledge about how aerosols interact with clouds and how ice and precipitation form in clouds. With the aim of shedding more light on these issues, a special workshop was held to discuss how aerosols affect precipitation. In addition, a special IAMAS/WMO Panel has been set up, headed by Prof. Peter Hobbs of the University of Washington, to study the science of this problem; its report is due in 2006.

At the conclusion of the conference the following new ICCP Executives were elected: Prof. Zev Levin, (Tel Aviv University, Israel) President; Prof. Andrea Flossmann, (Université Blaise Pascal, Clermont-Ferrand, France) Vice President; Dr. David Starr, (NASA Goddard Space Flight Center, Greenbelt MD, USA) Secretary. The next conference will be held in Mexico during 2008.

Zev Levin (zev@hail.tau.ac.il)

Plans for the 2009 Scientific Assembly

At the IUGG Executive Committee meeting in Boulder, Colorado, the presidents and secretaries general of IAMAS and IAPSO met and agreed, subject of course to approval, that our two associations should convene a joint scientific assembly in 2009. With the locations of recent and future meetings being Melbourne, Innsbruck, and Beijing for IAMAS; Melbourne, Mar del Plata, and Cairns for IAPSO; and Birmingham, Sapporo, and Perugia for IUGG (and with Melbourne and perhaps

India interested in IUGG 2011), it would seem appropriate to have the 2009 meeting in North or Central America or in Africa, although this is not necessary. With a joint scientific assembly, attendance can be expected to be of order 1200 scientists, with the overall duration encompassing 10 days spread over a weekend. Further information and expressions of interest in hosting the joint assembly should be conveyed to the secretaries general of the two associations.

The IAMAS website

The IAMAS web site (www.iamas.org) provides one of the main means for the Bureau, Executive Committee members, and Officers of the Association to communicate with scientists working in the atmospheric and related sciences. The site gives information on the meetings that IAMAS organises and sponsors, provides news items that might be of general interest and gives contact details for all of the present Officers. News items to be added to the site are always welcome, as are details of

meetings that would be of interest to atmospheric scientists. I'd be grateful if the IAMAS Commissions could send me details of their upcoming meetings and any reports that they would like to have posted. Any items for the site should be emailed to me at the address below.

John Turner (J.Turner@bas.ac.uk)
Deputy Secretary General and IAMAS web-master

2004 Meeting of the IUGG Executive Council

The Executive Committee (EC) of the International Union of Geodesy and Geophysics (IUGG) met in Boulder, Colorado from 31 August to 2 September 2004. The EC is composed of the officers of the IUGG itself (President Uri Shamir; Vice President Tom Beer; Secretary General Joann Joselyn; Treasurer Aksel Hansen; Bureau Members Yun-tai-Chen, Harsh Gupta, and Ali Abdel-Adim Ahmed Tealeb; and Past President Masaru Kono) plus the presidents of the seven member associations of the IUGG. In addition, the secretaries-general of the various associations also participate in the meeting. Attendance this year was excellent, with only a very few missing.

The initial topics of discussion concerned the various activities by IUGG and by the associations. At the IUGG level, this included discussion of interactions with ICSU, UNESCO and other higher-level entities. At the association level, this provided an opportunity to gain a sense of the interests of each of the various associations and their status in planning and convening assemblies (see <http://www.iugg.org/calendar.html>), undertaking reorganization, capacity building in countries around the world, and interests in various other issues (a number of which are discussed further below).

A major topic of discussion was clarifying the status of and hearing reports from various Inter-Association bodies. It was decided that entities sponsored by four or more associations would be called Union Association Bodies (UAB), and a number of guidelines were adopted for their operation and interaction with the IUGG. These bodies typically receive funding from the IUGG budget and are responsible for various cross-IUGG activities. There are currently three such entities, each of which is acceptably active:

- i. The Committee on Mathematical Geophysics (CMG), which held its 25th conference in New York City in June 2004 to bring together scientists from across the Earth sciences interested in advancing both theoretical and computational aspects. The IAMAS liaison to the CMG is Ray Pierrehumbert of the University of Chicago.
- ii. The GeoRisk Commission, which led a symposium at IUGG in Sapporo and has a major meeting coming up in Hyderabad, India in December 2004. The IAMAS liaison to GeoRisk is Gerd Tetzlaff of the University of Leipzig.
- iii. SEDI (Study of the Deep Interior of the Earth), which held its 9th symposium this past July in Garmisch-Partenkirchen. IAMAS does not have a liaison to SEDI.

In addition to the Union Association Bodies, there are also several Inter-Association Bodies (IAB) that are sponsored by two or three asso-

ciations. These can be formed by the associations with IUGG EC approval, and during this meeting, approval was granted for elevating the International Ocean Network (ION) to the status of an IAB (becoming an Inter-Association Body) as this group is now working to coordinate the planning of activities of various nations for ocean observatories that would observe measures relating to the solid Earth, the water column, and the air-sea interface.

The EC also considered the application of the International Commission on Snow and Ice (ICSI) to become a separate Association within IUGG. ICSI has been a part of the International Association of Hydrological Sciences (IAHS) for many years, even though its purview reaches well beyond the IAHS primary interest of water resources. ICSI's roots trace back well over a century, and their interest in becoming an association goes back over much of this time. Their request was considered most recently in Sapporo, with the matter referred to the EC for consideration. After very interesting presentations about how an association status would help unify and build-up the scientific community in this area, and after considerable discussion, the EC agreed to recommend that ICSI proceed through the steps to be approved as an Association at the IUGG meeting in Perugia in 2007, quite possibly to be named the International Association for the Cryospheric Sciences. The EC also agreed that in the interim ICSI would be elevated to the status of a UAB (with IAMAS being one of the sponsoring associations). While adding another Association might seem to aggravate the problem of fractionation of geophysical sciences, it was agreed that this change, in addition to being beneficial to scientists studying the cryosphere, could be addressed by encouraging associations to hold coordinated symposia and assemblies; for example, ICSI is co-organizing a couple of the symposia in Beijing with IAMAS.

Written reports from IUGG liaisons to other international programs and organizations were also reviewed. IAMAS Secretary General Roland List's report as IUGG liaison to the World Meteorological Organization covered their discussions on GEOSS, the International Polar Year (more on this below), THORPEX (a very exciting 10-year research programme on improving numerical weather prediction), the IPCC's progress on its Fourth Assessment Report, and on various proposed activities. In addition, Roland reported both to WMO at their meeting and to the EC at this meeting on the formation of the International Aerosol-Precipitation Science Assessment Group (IAPSAG) that has been established to conduct the review called for in WMO and IUGG resolutions approved last year. The IAPSAG is chair-ed by Prof. Peter Hobbs of the University

2004 Meeting of the IUGG Executive Council (contd.)

of Washington. More than a dozen scientists from around the world have been appointed as members, and initial efforts of the author team have begun. A separate review panel is also being organized, and the schedule calls for this assessment report to be completed by March 2006.

Other liaison activities of special interest to IAMAS that were reported on included:

- i. World Climate Research Programme (WCRP), which currently has out for comment a draft of a new integrated strategy and approach to coordinating the several WCRP research programmes. The document, entitled "COPES: Coordinated Observation and Prediction of the Earth System," can be downloaded from <http://www.wmo.int/web/wcrp/copces.html>. One issue that has arisen is continuing to work to coordinate and avoid conflicts in meeting schedules between WCRP (and other international research programmes) and the associations.
- ii. Scientific Committee on Ocean Research (SCOR), for which the IAMAS and IAPSO presidents are the IUGG liaisons and which is currently led by former IAMAS president Bob Duce. SCOR meets annually to ensure coordination among ocean research activities and programmes.
- iii. ICSU Special Workshop on Comet/Asteroid Impacts and Human Society: IAMAS President Mike MacCracken served on the planning committee as both the SCOR and IAMAS representative. The invitation-only workshop was held in the Canary Islands in late November and covered topics ranging from historical indications of such impacts to potential societal and environmental impacts in the future.

The EC also heard updates on the various activities planned to celebrate the anniversary of the IGY, encouraging coordination among them. Among the planned activities are:

- i. The International Year of Planet Earth (IYPE), scheduled for 2005-2007, which IUGS, UNESCO, IUGG and other associations are moving forward. The effort will include both

scientific and outreach efforts (see <http://www.esfs.org>).

- ii. The Electronic Geophysical Year (eGY), which is being advanced by IAGA within IUGG, and is aimed at making scientific data more available, with one objective being to help promote interdisciplinary scientific research (see *EOS* 85, no. 11, 16 March 2004).

- iii. The International Polar Year (IPY), planned for 2007-2008, which is formulating a set of proposed scientific activities (see <http://www.ipy.org>).

- iv. The International Heliophysical Year 2007 (IHY), which is aimed at advancing understanding of the Sun's influence on the Earth, and is building up from the NASA program "Living with a Star" and being coordinated with the UN Basic Space Science Initiative (see <http://ihy.gsfc.nasa.gov>).

- v. Climate and Weather in the Sun-Earth System (CAWSES) is an initiative of ICSU's Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) that intends during the period 2004-2008 to promote an international cooperative study of the entire interactive Sun-Earth system and is organized around four themes: Solar Influence on Climate; Space Weather: Science and Applications; Atmospheric coupling Processes; and Space Climatology. For further information, see <http://www.ngdc.noaa.gov/stp/SCOSTEP/scostep.html>.

Finally, the IUGG reviewed progress on planning for future General Assemblies. Progress for the General Assembly in Perugia is going well, and the overall theme for the meeting has been selected: "Earth: Our Changing Planet." Next year's EC meeting will be in Perugia in early September, and this will start discussions on inter-Association symposia, etc. (so we will need to have inputs at the IAMAS 2005 meeting in Beijing). There is also interest starting to emerge about hosting the IUGG 2011 general assembly (and it was agreed that the suggestion to switch IUGG and most association assemblies off of odd years in order to perhaps foster coordinated meetings with the IUGS was simply not practical).

The IAMAS newsletter

Please send any news that you want included in the newsletter to me by email. We aim to send out the next issue in about six months, prior to the IAMAS Beijing Assembly in August. Please include the word 'newsletter' in the subject line.

I welcome any ideas and comments regarding the newsletter, both in terms of future content

and format: however, please note that editing the newsletter is something that I have agreed to do as an 'extra curricular activity' so anything requiring significant amounts of time is likely to require assistance from the IAMAS EC

Gareth Marshall (gjma@bas.ac.uk)
Editor IAMAS newsletter