



**UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE
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This short, informal newsletter is intended to keep IUGG Member National Committees informed about the activities of the IUGG Associations, and actions of the IUGG Secretariat. Past issues are posted on the IUGG Web site (<http://www.iugg.org/publications/ejournals/>). Please forward this message to those who will benefit from the information. Your comments are welcome.

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1. Comptes Rendus of the XXIV IUGG General Assembly is done

Assistant Secretary General Katina Rogers completed a master copy of the Comptes Rendus of the XXIV IUGG General Assembly held in Perugia, Italy, 2-13 July 2007. The master copy can be viewed at the IUGG web-page: <http://www.iugg.org/assemblies/2007perugia/>. We are grateful to the Perugia Local Organizing Committee for their commitment to IUGG to distribute the Comptes Rendus.

2. The Democratic Republic of Congo, Ghana, and Morocco are now regular members of IUGG

IUGG welcomes the Adhering Organizations of D.R. Congo, Ghana, and Morocco as Union regular members of Category 1.

D.C. Congo (since 2004), Ghana (2006) and Morocco (1924) have been Associate members of IUGG. Associate members organize a National Committee and name correspondents to the Associations, are admitted to IUGG by vote of the Adhering Bodies, and otherwise participate in all scientific aspects of IUGG. But because Associate members are not able to pay annual dues, they do not vote in matters of IUGG business and may not hold office in the Union or the

Associations. However, Associate members may become regular, voting members with the approval of the Council (or the Bureau, acting on behalf of the Council between General Assemblies) by becoming able to pay dues.

Recently, the Royal Society announced a new initiative to support and increase African membership of ICSU Scientific Unions through the payment of their annual membership fees. D.C. Congo, Ghana, and Morocco applied to the Royal Society to fund their membership, and their applications were successful. The Royal Society will pay the 2008 membership dues for these countries. IUGG thanks the Royal Society for their financial support.

3. Report of the Local Organizing Committee of the XXV IUGG General Assembly

The Local Organizing Committee (LOC) of the XXV IUGG General Assembly met in April. Professor Ray Cas of Monash University, Melbourne, Australia was elected the Chair of the Local Organizing Committee. The following decision of the LOC was announced:

- General Assembly will be held from **27 June to 8 July 2011**.
- General Assembly venue will be the **new Melbourne Convention and Exhibition Centre, Melbourne, Australia**
- Professional Conference Organizer designate: “TourHosts”, Sydney, Australia
- Conference theme: “*Earth on the Edge: Science for a Sustainable Planet*”

The LOC nominated Dr. Peter Manins, CSIRO Division of Marine and Atmospheric Research, Melbourne, for the position of the Chair of the Scientific Program Committee. Peter Manins, who has a long and distinguished research career with CSIRO, has recently retired from full-time employment but maintains a research affiliation with CSIRO and has the time to commit. The IUGG Executive Committee approved the nomination.

4. News from the International Council for Science (ICSU)

Data and Information

The ad hoc Strategic Committee on Information and Data (SCID) held its third meeting in February 2008 (http://www.icsu.org/5_abouticsu/STRUCT_Comm_Adhoc_scid.html). A draft report and recommendations concerning the re-structuring of ICSU's data infrastructures has been circulated to all Members for consideration. IUGG and several Union Associations commented on the report. The major recommendations of SCID are that:

- 1) ICSU assert a much-needed strategic leadership role on behalf of the global scientific community in relation to the policies, management and stewardship of scientific data and information;
- 2) a new World Data Services system be created (as an ICSU Interdisciplinary Body), incorporating the World Data Centers (WDCs) and the Federation of Astronomical and Geophysical data analysis Services (FAGS) as well as other ‘state of the art’ data centres and services;
- 3) The Committee on Data for Science and Technology (CODATA) focus its activities on the three main initiatives identified in its draft strategy and extend its links to other organizations and networks to play a more prominent role within ICSU and within the wider scientific community;
- 4) a new *ad hoc* ICSU Strategic Coordinating Committee for Information and Data be established to provide broad expertise and advice to ICSU in this area;

- 5) ICSU National Members and Unions be strongly encouraged to establish committees or commissions, where these do not already exist, focusing on data and information issues.

Federation of Astronomical and Geophysical Services (FAGS) Council meeting

In 1956 the FAGS was established in the framework of the International Geophysical Year. The principal purpose of FAGS has been to encourage the analysis of long-term data sets and produce data products for the scientific community and other end-users. There are now 12 permanent services, each operating under the authority of one or more of the scientific unions, namely the IUGG, International Astronomical Union (IAU), and the Union Radio-Scientifique Internationale (URSI). The services, or components of services, are maintained nationally and their role is to collect, analyze, interpret and disseminate observations, data and information related to astronomy and geophysics. FAGS is a loose federation of diverse services, some of which themselves act as the hubs for their own distributed networks of data centers. The Federation is overseen by a Council of eight people, including representatives from the relevant Unions, which provide a small amount of funding that is distributed to the services, via the panel. The Unions provide a quality assurance function for the services and also identify gaps, where new services are needed, within their disciplinary scope.

On 22-24 April 2008 the FAGS Council meeting was held in Paris. The WDCs Panel members, Service Directors, ICSU Deputy Director, and Secretaries General of IAU, IUGG, and URSI were invited to attend the meeting. Major topics of the agenda were the presentation and discussion of the draft SCID report and plans for the future ICSU structure; reports by the FAGS Chairman and Secretary, reports by the Service Directors; budget and allocations to Services for 2008.

Ruth Neilan, FAGS Council member and member of ad hoc SCID; Hermann Drewes, IAG Secretary General; and Alik Ismail-Zadeh, IUGG Secretary General, represented IUGG at the meeting.

Publication Ethics

Following discussions at the World Conference on Research Integrity in 2007, the ICSU Executive Board decided to establish a Virtual Working Group on Publication Ethics (http://www.icsu.org/5_abouticsu/STRUCT_Comm_Adhoc_pubethics.html). After consultation with the ICSU Unions, this group was set up rapidly in order to interact with an initiative from the International Association of Scientific, Technical and Medical Publishers. The aim is to produce a universal set of ethical guidelines covering issues, such as authorship, peer-review, the role of editors and conflicts of interest.

Zbigniew Kundzewicz of IAHS is the IUGG representative to this ICSU Working Group.

European Science Foundation Conferences to cooperate with Africa

The European Science Foundation (ESF), ICSU and the Network of African Science Academies, together with the Royal Netherlands Academy of Arts and Sciences, the Royal Society, The British Academy, the Académie des Sciences and the Royal Swedish Academy of Sciences, are joining forces for an unprecedented series of research conferences to promote excellence and research collaboration between Europe and Africa in basic science. The Europe-Africa Frontier Research Conference Series will focus on basic sciences, thus promoting research and cooperation in a field that often finds it hard to attract adequate attention – and funding. Each conference will focus on a jointly selected topic that is of key significance to the present and future development in Africa, Europe and beyond. Each conference will be co-chaired by two

top experts in the field – one from Africa and one from Europe. The conference location will alternate between the two continents.

Monitoring gaps in IPCC report

The report *Future Climate Change Research and Observations* is now available at the IGBP web-page: http://www.igbp.kva.se/documents/resources/Report_58.pdf. The report comes out of the workshop held in Sydney, Australia, in October 2007, which investigated the gaps and uncertainties identified in the IPCC Fourth Assessment Report. The findings will guide three ICSU sponsored international programmes – GCOS, WCRP, and IGBP in developing future strategies for climate change observations and research.

Global Observations

The Science and Technology Committee (STC) of the Group on Earth Observations (GEO) met in Hannover, Germany, in February 2008. The Committee on Space and Research (COSPAR) joined Germany, South Africa and the European Commission as Co-Chair of the STC, following decisions taken at the Fourth GEO Plenary and Ministerial Summit in November 2007. The STC reviewed progress of the GEO tasks relating to climate, water and weather, and discussed the transition of the Integrated Global Observing Strategy Partnership (IGOS-P) to GEO and the role of the STC in this regard. The STC also discussed the draft White Paper on the Data Sharing Principles for the Global Earth Observation System of Systems (GEOSS), which was prepared by the ICSU Committee on Data for Science and Technology (CODATA). Discussion of this important document will continue at the next STC meeting in Geneva in May.

Earth System Science Partnership

The report from the Review of the Earth System Science Partnership (ESSP) was finalized at the end of February 2008. The report will go to CSRP for approval at its meeting in April 2008.

New appointments

Dr Ghassem R. Asrar has been appointed Director of the Joint Planning Staff for the World Climate Research Programme (WCRP). He joins the WCRP following a successful career at NASA and the Agricultural Research Service of the US Department of Agriculture.

Professor Sybil Seitzinger, Rutgers University, has been appointed Executive Director of the International Geosphere-Biosphere Programme (IGBP). She will take up the appointment on 1 September.

(Source: ICSU Newsletter, April 2008)

5. News from the International Year of Planet Earth (IYPE)

IYPE Book

“One of the major goals of the International Year of Planet Earth is to demonstrate the enormous benefits the Earth sciences have brought and can bring to society”, tells Mr. K. Matsuura, Director-General of UNESCO, in his message to readers of the IYPE Book. Please see the content of the book at web:

<http://www.webmags.co.uk/mag.aspx?magcode=PlanetEarth&redir=1>

World Young Earth Scientists Congress

The First World Young Earth Scientists Congress will take place in autumn 2009. During the whole Congress young earth-scientists (under 35 yrs) from different backgrounds and nations

will discuss future trends in earth-system science, and also compare future job and research opportunities in their respective countries. The Congress will allow young scientists to discuss and address some of today's important scientific challenges in a multi-disciplinary and international environment. The Congress will have different disciplinary roundtables going in parallel. These roundtables are expected to involve not only young earth-scientists and professionals but also possibly young leaders and policy makers. The different roundtables will allow young representatives from associations, institutions, universities, young leaders in political bodies and administrative bodies from around the world to sit down together and discuss issues affecting the world, in order to produce a short list of long-term international actions to be taken, involving their respective institutions. The aim of the congress is also to create a long-term strong inter-cultural network to help future improvement of research and working opportunities globally for young geo scientists and professionals.

See more detail on the Congress at <http://www.giovanigeologi.it/itype.asp>

6. News from the International Polar Year (IPY)

The legacy of the IPY was highlighted recently by the UN Environment Programme (UNEP) in a resolution on sustainable development in the Arctic Region. The resolution coincides with the halfway point of the IPY and is an opportune time to revisit the IPY and its intended legacy.

The IPY is an intensive burst of internationally coordinated, interdisciplinary, scientific research and observations focused on the Polar Regions. Thousands of scientists from around the world are involved in more than 200 research projects that integrate natural and social sciences. In recognition of the public interest in the Polar Regions, education, outreach and communication activities have also been integrated into the major research projects. IPY is sponsored by ICSU and the World Meteorological Organization (WMO) and runs from March 2007 to March 2009.

Polar science post-IPY should be vastly strengthened and improved with fresh ideas seeded by examining existing and new data and an increased awareness by polar residents, schoolchildren, the general public, and decision-makers worldwide. It is intended that the IPY will leave a legacy of observing sites, facilities and systems to support ongoing polar research and monitoring. And, perhaps the most important legacy will be a new generation of polar scientists—trained and enthused during IPY—driving new discoveries. There will most certainly be other benefits that are entirely unplanned and will become clear only after the formal IPY period has ended. With key international organizations, including UNEP, recognizing and acknowledging the importance of IPY, the benefits will likely have an impact on the world for many years to come.

For more information on the IPY, visit www.ipy.org (source: ICSU Newsletter, April 2008)

7. Report on the Workshop on mass balance measurements and modeling

The Workshop on mass balance measurements and modeling was held at Skeikampen, north of Lillehammer, Norway from 25 to 28 March 2008. In total, 99 abstracts were accepted for presentations at the workshop. More than 80 people from Europe, USA, Canada, Chile, Russia, New Zealand, Japan, and India participated at the workshop. Oral and poster presentations covered the workshop topics. The workshop website www.nve.no/mbworkshop has further

details about the meeting. IUGG supported the workshop, and this support assisted participants from Canada (young scientist), India, and Russia to attend the meeting.

Contributed by T. Skaugen and L. Andreassen

8. Obituaries

Edward Lorenz, father of chaos theory and butterfly effect: 1918-2008

Edward Lorenz, a meteorologist and professor emeritus of Massachusetts Institute of Technology, who tried to explain why it is so hard to make good weather forecasts and wound up unleashing a scientific revolution called chaos theory, died April 16 at his home in Cambridge. He was 90.



Edward Lorenz was the first to recognize what is now called chaotic behavior in the mathematical modeling of weather systems. In the early 1960s, Lorenz realized that small differences in a dynamic system such as the atmosphere--or a model of the atmosphere--could trigger vast and often unsuspected results. These observations ultimately led him to formulate what became known as the butterfly effect – a term that grew out of an academic paper he presented in 1972 entitled: "Predictability: Does the Flap of a Butterfly's Wings in Brazil Set Off a Tornado in Texas?" Lorenz's early insights marked the beginning of a new field of study that impacted not just the field of mathematics but virtually every branch of science--biological, physical and social. In meteorology, it led to the conclusion that it may be fundamentally impossible to predict weather beyond two or three weeks with a reasonable degree of accuracy.

Some scientists have since asserted that the 20th century will be remembered for three scientific revolutions--relativity, quantum mechanics and chaos. "By showing that certain deterministic systems have formal predictability limits, Ed put the last nail in the coffin of the Cartesian universe and fomented what some have called the third scientific revolution of the 20th century, following on the heels of relativity and quantum physics," said Kerry Emanuel, professor of atmospheric science at MIT. "He was also a perfect gentleman, and through his intelligence, integrity and humility set a very high standard for his and succeeding generations."

Born in 1917 in West Hartford, Conn., Lorenz received an AB in mathematics from Dartmouth College in 1938, an AM in mathematics from Harvard University in 1940, an SM in meteorology from MIT in 1943 and an ScD in meteorology from MIT in 1948. It was while serving as a weather forecaster for the U.S. Army Air Corps in World War II that he decided to do graduate work in meteorology at MIT. "As a boy I was always interested in doing things with numbers, and was also fascinated by changes in the weather," Lorenz wrote in an autobiographical sketch.

Lorenz was a member of the staff of what was then MIT's Department of Meteorology from 1948 to 1955, when he was appointed to the faculty as an assistant professor. He was promoted to professor in 1962 and was head of the department from 1977 to 1981. He became an emeritus professor in 1987. Lorenz, who was elected to the National Academy of Sciences in 1975, won numerous awards, honors and honorary degrees. In 1983, he and former MIT Professor Henry

M. Stommel were jointly awarded the Crafoord Prize by the Royal Swedish Academy of Sciences, a prize established to recognize fields not eligible for Nobel Prizes. In 1991, he was awarded the Kyoto Prize for basic sciences in the field of earth and planetary sciences. Lorenz was cited by the Kyoto Prize committee for establishing "the theoretical basis of weather and climate predictability, as well as the basis for computer-aided atmospheric physics and meteorology." The committee added that Lorenz "made his boldest scientific achievement in discovering 'deterministic chaos,' a principle which has profoundly influenced a wide range of basic sciences and brought about one of the most dramatic changes in mankind's view of nature since Sir Isaac Newton."

During leaves of absence from MIT, he held research or teaching positions at the Lowell Observatory in Flagstaff, Ariz.; the Department of Meteorology at the University of California at Los Angeles; the Det Norske Meteorologiske Insitutt in Oslo, Norway; and the National Center for Atmospheric Research in Boulder, Colo.

An avid hiker and cross-country skier, Lorenz was active up until about two weeks before his death, his family said. Lorenz is survived by three children, Nancy, Edward and Cheryl, and four grandchildren.

(Source: MIT News, April 16, 2008)

Pembroke J. Hart: 1929–2008

Dr. Pembroke J. Hart, a geophysicist who was facilitating, coordinating, and implementing international research collaboration, died 10 February after a short illness. He was 79.



From 1952 to 1954, Hart worked on seismic studies as a predoctoral fellow in the department of terrestrial magnetism at the Carnegie Institution of Washington. He later returned to the institution as a visiting investigator as part of the 1965 Andean Seismic Expedition and the 1968 East Coast Seismic Experiment. In 1955, Hart received his doctorate in physics from Harvard University. In 1956, he joined the staff of the National Academy of Sciences/National Research Council's (NAS/NRC) U.S. Committee for the 1957–1958 International Geophysical Year (IGY). During the subsequent 35 years, he played an important role as a senior staff member supporting a variety of major international initiatives in the geophysical sciences. In addition to the IGY, these initiatives included the Upper Mantle Program and its successors, the International Geodynamics Project and the International Lithosphere Program; the World Data Centers (WDCs); and the International Year of the Quiet Sun. As an NRC staff officer, Hart had a major role in writing, editing, and issuing many reports of the U.S. committees for six major international activities of the International Council for Science (ICSU) during the period 1958–1990.

In 1963, in honor of his contributions to IGY, a geographic feature in Antarctica was named “Hart Hills.” In 1964, Vladimir Belousov, IUGG President and chairman of the Upper Mantle Program, commented, “The work of the Upper Mantle Secretariat was greatly facilitated through the assistance of Dr. P. Hart, working selflessly and with excellent skill...”. Hart was recognized by his election in 1991 as a lifetime member of the ICSU Panel on WDCs and in 1995 as a lifetime member of that organization’s International Commission on the Lithosphere. He received the Harry Oscar Wood Award in 1968 from the Carnegie Institution and the Edward A. Flinn III Award in 2006 for “unselfish cooperation in research” from the American Geophysical Union. In addition, Pembroke Hart was elected fellow of the American Association for the Advancement of Science and of the Geological Society of America.

(Source: article by T. F. Malone, Foreign Secretary, U.S. National Academy of Sciences published in EOS, Vol. 89, No. 18, 29 April 2008)

9. IUGG-related meetings occurring during May – July 2008

A calendar of meetings of interest to IUGG disciplines (especially those organized by IUGG Associations) is posted on the IUGG web site [www.IUGG.org/calendar]. Specific information about these meetings can be found there. Individual Associations also list more meetings on their web sites appropriate to their disciplines.

- May 6-8, IAHS, Toronto, Canada, 4th International Symposium on Flood Defence.
- May 5–9, Liege, Belgium, 40th International Liege Colloquium on Ocean Dynamics, and Advanced Research Workshop on Oceanography of the rapidly changing Arctic and Sub-Arctic.
- May 10-14, Banff, Alberta, Canadian Geophysical Union Annual Meeting
- May 12-15, IAG, Lisbon, Portugal, Joint Conferences of the Thirteen FIG Symposium on Deformation Measurements and Analysis, and the Fourth IAG Symposium on Geodesy for Geotechnical.
- May 18-24, IAGA, Crete, Greece, 12th International Symposium on Equatorial Aeronomy (ISEA 12).
- May 19-23, IAMAS, Gijon, Spain, International Symposium “Effects of Climate Change on the World’s Oceans”.
- May 27-30, AGU, Fort Lauderdale, Florida, USA, Joint Assembly.
- May 27-31, IAHS, Ohrid, Republic of Macedonia BALWOIS 2008 - Third International Conference on Water Observation and Information Systems for Decision Support.
- May 28-31, IAGA, Helsinki, Finland, First International Workshop on High-Energy Particle Precipitation in the Atmosphere (HEPPA).
- June 8-13, IASPEI, Saariselk, Finland, Seismix2008.
- June 9-18, IAGA, Golden, Colorado, USA XIIIth IAGA Workshop on Geomagnetic Instruments, Data Acquisition, and Processing.
- June 15-20, CMG, Longyearbyen on Spitsbergen, Norway 27th IUGG Conference on Mathematical Geophysics: Dynamics in Earth Systems: Flow, Fracture and Waves.

- June 22-28, IAGA, Prague, Czech Republic, 11th Castle Meeting on New Trends in Geomagnetism: Palaeo, Rock and Environmental Magnetism.
 - June 24-28, IAHS, Kampala, Uganda, Intl Conference "Groundwater & Climate in Africa".
 - June 23-27, IAG, Chania, Crete, Greece, International Symposium on "Gravity, Geoid and Earth Observation: GGEO 2008".
 - June 29 - July 5, IAMAS, International Ozone Commission, Tromsø, Norway, Quadrennial Ozone Symposium.
 - July 7-11, IAMAS, Cancun, Mexico, International Conference on Clouds and Precipitation (ICCP).
 - July 8-11, SCAR, IASC, WMO, St. Petersburg, Russia, SCAR/IASC IPY Open Science Conference: Polar Research: Arctic and Antarctic Perspectives in the International Polar Year.
 - July 13-20, COSPAR Montreal, Canada, 37th COSPAR Scientific Assembly.
 - July 18-22, GeoRisk Barcelona, Spain, Symposium "The Planet Earth", Euroscience Open Forum.
 - July 27-31, SEDI, Kunming, China, 2008 SEDI Symposium.
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End of IUGG Electronic Journal Volume 8 Number 5 (May 1, 2008)

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Note: Contributions to IUGG E-Journal are welcome from members of the IUGG family. Please send your contributions to Alik Ismail-Zadeh by e-mail (insert in Subject line: *contribution to E-Journal*). The contributions will be reviewed and may be shortened by the Editor.