



**INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS**  
**UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE**

## **The IUGG Electronic Journal**

**Volume 10 No. 6 (1 June 2010)**

This 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.

### **Contents**

1. IUGG Statement “Volcanological and Meteorological Support for Volcanic Ash Monitoring”
2. IUGG Committee on Education and Capacity Building constituted
3. Call for Reports of the National Committees for IUGG
4. Report on the Business Meeting of the Austrian National Committee for IUGG
5. News from the International Council for Science (ICSU)
6. News from the Scientific Committee on Problems of the Environment
7. Awards and Honours
8. IUGG-related meetings occurring during June - August 2010

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### **1. IUGG Statement “Volcanological and Meteorological Support for Volcanic Ash Monitoring”**

*The Statement was adopted by the IUGG Bureau on 28 May 2010 and follows the IUGG Statement of 20 April 2010 on Volcanic Ash Clouds.*

The eruptions of Eyjafjallajökull, Iceland, during early 2010, have highlighted the importance of a close understanding of the eruptive state of each of the world’s active volcanoes, for the safety and health of local residents as well as for air traffic and other purposes. It has become increasingly evident during the eruption that accurate specification of the ash column height and the ash characteristics from the eruption are necessary for safe and efficient routing of air traffic. To be able to forecast ash clouds for the aviation hazards, the clouds’ concentration, particle size and total mass is required in real time. The work of the volcanologists and meteorologists of Iceland, bringing together earth and atmospheric sciences, in support of the operations of the London Volcanic Ash Advisory Centre, has been critically important in this regard.

In improving the global response to volcanic clouds as aviation hazards, it must be understood that the great majority of the Earth’s active volcanoes are located in less industrialized countries or in remote locations, and are not monitored to the standards of Iceland. Only about 50% of the World’s volcanoes that currently threaten air operations have any sort of ground based monitoring. Also, less than 50 of the 1300 volcanoes with Holocene age eruptions (approximately the last 12000 years) worldwide are considered to be *well* monitored.

In this regard, the IUGG emphasises:

- The capability to understand, forecast and promptly report eruptions, based on thorough study and instrumentation of active volcanoes, remains vital for aviation safety, for residents exposed to local volcanic hazards, and also for assessing the magnitude and effects of volcanic emissions on our atmosphere and climate;
- An improvement in support for local volcano observatories would improve the timing, scope, and accuracy of information on volcanic activity;
- In meeting requirements from the International Civil Aviation Organization (ICAO) for States to provide volcanological information to aviation, the long term sustainability of such support for volcano observatories is an important consideration. ICAO, advised by the International Union of Geodesy and Geophysics and other organisations including the World Meteorological Organization (WMO), has prepared arrangements where a State may choose to recover reasonable costs for the provision of information to aviation from the aviation industry. A State could, alternatively, choose to support observatories directly without such arrangements. Guidelines on these issues are now available as referenced below;
- Any volcanic crisis places high pressure on the responsible agency: support for aviation functions is typically only one of many aspects of a volcanic crisis that volcanologists must consider. International science protocols, prepared by IUGG constituent association, the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), already exist to assist in scientific cooperation during a crisis, and may be useful in the context of an aviation-focused volcanic crisis;
- Where observations exist (such as satellite data, pilot reports and meteorological radar coverage over a volcanic area), arrangements for multi-disciplinary observation sharing between all those concerned with the hazard assessment from the volcanic activity should be specified and followed to ensure the best possible use of observations.

In summary, increased support for the volcano observatories of the world, as part of the international science effort to improve volcanic cloud monitoring, is a necessary measure for improving volcanic impact management and aviation safety as well as for aiding natural hazard mitigation on the ground.

Further Reading:

Ewert, J.W., and Newhall, C.G., 2004, *Status and challenges of volcano monitoring worldwide*, in Proceedings of the 2nd International Conference on Volcanic Ash and Aviation Safety, June 21-24, 2004, Alexandria, Virginia: Office of the Federal Coordinator for Meteorological Services and Supporting Research, session 2, p. 9-14, available at

<http://www.ofcm.noaa.gov/ICVAAS/Proceedings2004/ICVAAS2004-Proceedings.htm>

*Guidance for State Volcano Observatories: The International Airways Volcano Watch*, available at [www.wovo.org](http://www.wovo.org)

IAVCEI Subcommittee for Crisis Protocols: Newhall, C., Aramaki, S. Barberi, F., Blong, R., Calvache, M., Cheminee, J.-L., Punongbayan, R., Siebe, C., Simkin, T., Sparks, S., and Tjetjep, W., 1999. *Professional conduct of scientists during volcanic crises*, Bulletin of Volcanology, 60, p. 323-334.

<http://www.springerlink.com/content/5dbwwa6qff64uqbw/>

The Statement can be downloaded from the IUGG web page: <http://www.iugg.org/about/special.php>

## **2. IUGG Capacity Building and Education Committee**

IUGG President Tom Beer has announced the members of the Capacity Building and Education Committee:

**Chair:** Laszlo SZARKA (Hungary)

**Members:** Nasser ABOU-ASHOUR (Egypt), Gerhard NAVRATIL (Austria), Shichang Kang (China), Jadwiga Anna JARZYNA (Poland), José Sellés Martínez (Argentina), Tomas HALENKA, (Czech Rep.), Kathy WHALER (United Kingdom)

The Committee was formed by the decision of the IUGG Executive Committee meeting held on 9-11 October 2009 in Melbourne (Australia) to

- examine current issues in science education and research on learning and disseminate knowledge about it;
  - be in charge of the science education policy of the Union (e.g. K-12 level, university level, other);
  - assist the Union officers in defining new fellowships and grants programs;
  - identify funding sources for fellowships and grants;
  - advocate, in partnership with other ICSU Unions and geophysical societies, for increased teaching of the geosciences in classrooms worldwide;
  - be responsible for cooperation and exchange (via workshops, seminars, symposia, conferences) and collaborative programs and interdisciplinary projects (especially in the developing world) and for technology transfer issues.
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## **3. Call for Reports of the National Committees for IUGG**

It is the custom of the National Committees for IUGG to prepare a Quadrennial Report for the General Assemblies. Many of these have been comprehensive summaries of national activities in geodesy and geophysics that showcase the accomplishments of the past four years. Please look at <http://www.iugg.org/members/nationalreports/index.php> to see the reports submitted in 2003 and 2007. IUGG calls for the reports of the National Committee for IUGG to be submitted prior the XXV IUGG General Assembly, 27 June- 8 July 2011, Melbourne, Australia. A report is expected to consist of an executive summary (max 2 pages), table of content, the main body of the technical report, and references. Please send a PDF copy of the report to the IUGG Secretariat to be placed at the IUGG web page. The reports of the National Committees are referenced not only by IUGG Members, but also by the scientific community at large.

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## **4. Report on the Business Meeting of the Austrian National Committee for IUGG**

The business meeting of the Austrian National Committee for IUGG (ANC-IUGG) was held on 20 April 2010 at the Vienna University of Technology (Vienna, Austria). Prof. Harald Schuh, President of the Austrian Geodetic Commission, the adhering organisation of the ANC-IUGG, has been leading the ANC-IUGG since 2008. Austrian representatives of six IUGG Associations reported about their work and presented their recent and planned activities. The cooperation between scientists representing IUGG Associations in Austria was discussed, particularly in the

field of public relations and mass media. Topics such as the Austrian contribution to the European Plate Observing System (EPOS) and its relation to GEO were also discussed. It was agreed to allow two days for the next meeting of the National Committee because there are many open questions and common tasks to be discussed.

Received from Norbert Höggerl, ANC-IUGG Secretary

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## **5. News from the International Council for Science**

### ***Foresight Analysis: International Science in 20 Years***

ICSU is conducting a foresight analysis, exploring the potential development of international science over the next 20 years. The foresight is a key component in the development and implementation of the next ICSU strategic plan. It will test the role and mission of ICSU and guide long-term strategic choices aimed at building ICSU's value in strengthening international science for the benefit of society. More than 170 ideas for key drivers of international science over the next 20 years were submitted online during an initial round of consultation. These ideas have been integrated with those gathered from literature, online sources and ICSU-related meetings over the past three months. Following discussion by the Committee on Scientific Planning and Review (CSPR) at its meeting in February, the drivers will be distilled and filtered down to a manageable number in order to frame scenarios that will explore potential futures of international science. A broad consultation on these draft scenarios is planned for October 2010.

### ***Visioning for Earth System Sciences***

An Open Forum on Global Sustainability Research and Visioning Institutional Framework will take place in Paris on 22 June. The Open Forum will be followed by a closed two-day meeting with representatives from the global environmental change community - including funders and the co-sponsors of the four programmes - and institutional experts. As preparation for this meeting, input was sought on the draft document Grand Challenges in Global Sustainability Research: A Systems Approach to Research Priorities for the Decade (<http://www.icsu-visioning.org/wp-content/uploads/Research-Priorities-Draft-6-web-consultation.pdf>). Nearly 300 responses were received via an online consultation (21 December 2009–21 February 2010), which will be analyzed by the Visioning Task Team (<http://www.icsu-visioning.org/the-visioning-process/task-team/>). Elinor Ostrom, the first woman to win a Nobel Prize in economic sciences, joined the Task Team in February 2010.

### ***Science Education Review***

The ad-hoc Review Panel ([http://www.icsu.org/1\\_icsuinscience/CAPA\\_Paa\\_1.html](http://www.icsu.org/1_icsuinscience/CAPA_Paa_1.html)) which will make recommendations on ICSU's potential role in science education, held its inaugural meeting in Paris in January. The 12-member panel held broad discussions on past and present ICSU initiatives and the general situation in science education worldwide. The panel agreed on the general outline of its final report and the questions it will pose to ICSU Members over the coming weeks as part of a survey of their activities and experiences in this important field.

## ***Independent Review of the IPCC***

The InterAcademy Council (IAC, <http://www.interacademycouncil.net/>) has been invited by the United Nations Secretary-General and the chair of the IPCC to conduct an independent review of the IPCC processes and procedures. The IAC will deliver its findings by the end of August in order to provide recommendations for the IPCC's Fifth Assessment, which has already commenced.

Source: ICSU Newsletter, March 2010, vol. 8, no. 1

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## **6. News from the Scientific Committee on Problems of the Environment**

The Scientific Committee on Problems of the Environment (SCOPE) is working with the United Nations Environment Programme (UNEP) to produce the next UNEP Year Book that will be launched at UNEP's Governing Council meeting in February 2011. The 2011 Year Book will be the eighth edition in this acclaimed UNEP series that reports on new environmental science and emerging issues and communicates directly to policy-makers. The Year Book provides scientists and experts with an opportunity to reach out to primary target audiences that include delegates of the UNEP Governing Council, policy advisors and ministers of the environment around the world. Other audiences include UN agencies, academia, the private sector and the general public. SCOPE has been involved in the Year Book since it was first published in 2003.

Received from Norman (Jake) Peters, IUGG/SCOPE Liaison

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## **7. Awards and Honours**

The U.S. National Academy of Engineering (NAE) announced that ***Daniel Baker***, Director of the Laboratory for Atmospheric and Space Physics, was elected as a new academy member. Baker is a Member of the IAGA Executive Committee.

***Gary Glatzmaier*** (University of California, Santa Cruz, USA) and ***Ignacio Rodriguez-Iturbe*** (Princeton University, Princeton, USA) were elected to the U.S. National Academy of Sciences. Glatzmaier is a Member of the Advisory Committee, IUGG Commission on the Study of the Deep Interior of the Earth (SEDI). Rodriguez-Iturbe has served IUGG in several capacities: First Vice-President of IAHS, Vice-President of the IAHS International Commission on Water Resources Systems, Chairman of the IAHS Working Group on Scale Problems in Hydrology, and Associate Editor of the IAHS Hydrological Sciences Journal.

***Francis Albarede***, Member of the Advisory Committee of SEDI, was elected the International Secretary of the American Geophysical Union.

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## 8. IUGG-related meetings occurring during June – August 2010

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](http://www.IUGG.org/calendar)]. Specific information about these meetings can be found there. Individual Associations also list more meetings on their web sites according to their disciplines.

- June 2-6, IAG, Gävle, Sweden, European Reference Frame (EUREF) 2010 Symposium.
- June 7-11, CMG, Pisa, Italy, 28th IUGG Conference on Mathematical Geophysics - Modelling Earth Dynamics: Complexity, Uncertainty and Validation.
- June 7-12, IAG, Aegean University Mytilene/Lesvos, Greece, School on Reference Frames.
- June 7-15, IACS, IUGG, Fairbanks & McCarthy, Alaska, USA, International summer school/workshop in glaciology.
- June 8-12, IPY, Oslo, Norway, IPY Oslo Science Conference.
- June 13-18, IAHS, Zurich, Switzerland, Groundwater Quality 2010 Conference.
- June 14-18, IAHS, Warsaw, Poland, International Symposium on sediment dynamics for a changing future.
- June 15-18, IAGA, Boulder, Colorado, USA, 6th Workshop on Long-Term Changes and Trends in the Atmosphere (TREND 2010).
- June 16, IAG, Braunschweig, Germany, Second Workshop on Application of Artificial Intelligence and Innovations in Engineering Geodesy.
- June 16-19, IAHS, Constantza, Romania, Water 2010.
- June 22-25, IAG, Saint Petersburg, Russia, Symposium on Terrestrial Gravimetry: Static and Mobile Measurements.
- June 23-25, IAHS, Coimbra, Portugal, Tenth International Conference on Precipitation (IPC10).
- June 28 - July 2, IAG, St. Petersburg, Russia, 10th International Geoid School.
- June 28 - July 2, IAG, Newcastle, UK, IGS Workshop and Special Workshop on Vertical Rates from GPS.
- July 2-3, IAHS, Paris, France, Xth Kovacs Colloquium.
- July 2-7, GeoRisk Commission, IUGG, Torino, Italy, symposium “Breaking Seismo-ill-Logical Circulus Vitiosus” (ESOF 2010).
- July 5-9, AOGS, Hyderabad, India, 7th Annual Meeting and Geosciences World Community Exhibition.
- July 11-16, IAMAS, IUGG, Halifax, Canada, CACGP/IGAC Joint Conference “Atmospheric Chemistry: Challenging the Future”.
- July 12-16, SCOSTEP, IAGA, Berlin, Germany, SCOSTEP Symposium.
- July 12-16, IAMAS, Berlin, Germany, Solar-Terrestrial Physics Symposium (STP-12).
- July 15-16, IAMAS, IUGG, Columbus, Ohio, USA, Workshop on Antarctic Clouds.
- July 18-25, COSPAR, IUGG, Bremen, Germany, 38th COSPAR Scientific Assembly.

- July 19-23, SEDI, IUGG, Santa Barbara, California, USA, 12th SEDI Symposium.
  - August 8-13, AGU, IASPEI, Iguassu Falls, Brazil, Meeting of the Americas.
  - August 9-10, IUGG, AGU, and ROLAC, Iguassu Falls, Brazil, Symposium “Natural Hazards and Disaster Risk in Latin America and Caribbean”.
  - August 12-14, IACS, IUGG, Lijiang, China, Cryospheric Changes and Influences – Cryospheric Issues in Regional Sustainable Development.
  - August 13-19, IASPEI, IUGG, Foz do Iguacu, Brazil, Managing Waveform Data and Related Metadata for Seismic Networks.
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End of IUGG Electronic Journal Volume 10 Number 6 (1 June 2010)

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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.**