

IAGA, the International Association of Geomagnetism and Aeronomy,
is the premier international scientific association promoting the study of terrestrial and planetary magnetism and space physics

Foreword



This issue of IAGA News contains information about the XXVth General Assembly of IUGG - Earth on the Edge: Science for a Sustainable Planet - held in Melbourne, Australia, 27 June - 8 July 2011, and more specifically

about the IAGA participation. Some major decisions taken during the Assembly by the IAGA Conference of Delegates and the Executive Committee are reported. As the IUGG meeting represented the moment to renew the IAGA Executive Committee and President, I would like to take this opportunity to sincerely thank Eigil Friis-Christensen and the rest of the Executive Committee for the work done.

This issue also contains reports on IAGA activities of different kinds and provides information about deceased IAGA scientists. In its present form, IAGA News contains brief summaries of different activities and topics; the reader is referred to the [IAGA website](http://www.iugg.org/IAGA/) for more details.

IAGA News is distributed – in its electronic form – to the National Correspondents in the Member Countries, to all IAGA officers and to IAGA scientists who have attended recent IAGA assemblies. Please free to distribute IAGA news around, especially to the national policy makers and leaders, whose decisions can affect the activities of IAGA scientists.

Mioara Mandea
(Secretary-General)

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IAGA on the Web

Information on IAGA is regularly updated at the IAGA site:

<http://www.iugg.org/IAGA/>

1 Message from the President

I am deeply honoured by the opportunity to serve the community as your President for the next four years. Our Association is in a healthy state, thanks to the tireless enthusiasm shown by the many who contribute to its activities, and above all to the tremendous leadership shown by my predecessor, Eigil Friis-Christensen. We all owe a deep debt of gratitude to him and the rest of the Executive Committee who have completed their terms of office. I would also like to record my personal thanks to those who have served as Division Officers or members of our other Committees; their dedication and commitment means that the business of the Association runs smoothly, and most of all, that we have successful scientific meetings.



Those of us who made it to Melbourne in the austral winter were treated to a wide-ranging IUGG General Assembly, efficiently run in a new conference centre which provided an excellent space for poster viewing and the exhibition, as well as plenty of varied sized rooms for oral presentations. This gave us the chance to catch up with latest developments in our own research specialisms, as well as take in some of the more inter-disciplinary approaches to science of the natural environment. Being in Australia brought home the pertinence of the General Assembly's theme – the country's economy is booming, fuelled by the demand for natural resources (bringing with it eye-wateringly high prices for the visitor!), but the meeting followed not long after it suffered a series of natural disasters, including devastating floods, and some participants' travel plans were affected by ash from a volcanic eruption in Chile. IUGG science is central to the understanding and mitigation of natural hazards, as well as resource exploration. Dan Baker gave an excellent and well-received Union Plenary lecture entitled 'Assessing Solar and Solar-Terrestrial Influences as a Component of Earth's Climate Change Picture'.

We now look forward to a series of smaller meetings and workshops. I believe that this type of 'bottom-up' activity is essential to maintain the health of the IAGA community and its science and, even in these times of financial constraints, we must use our best endeavours to support them. They are a key way to get younger scientists – the 'life blood' for the next generation – and those from less developed nations involved in IAGA.

At an Executive Committee meeting in Melbourne, IUGG took steps to form a Commission on Climatic and Environmental Change. This is seen as bringing together the Associations to add value to the activities of each individually on the topic; its success will depend critically on the synergy of ideas, problems and approaches generated between them. IAGA is also seeking to improve its connections and collaborations with other Associations. Specifically, we have approached IASPEI and IAVCEI concerning our participation in their Inter-Association Commissions on Volcano Geophysics, and the Physics and Chemistry of Earth Materials, where electromagnetic properties are of relevance. In addition, we have also begun discussions with IAMAS concerning holding a joint Assembly in 2017, recognising the strong scientific links between our two Associations regarding external magnetic fields.

I'm sure the next four years will present challenges as well as successes. My aim is that IAGA will retain – and even expand – its relevance to all of us, so that the strength and productivity of our community continues to grow as we address the scientific questions and societal issues underpinning our work.

Kathryn Whaler
(President)

2 The XXVth IUGG General Assembly, Melbourne

2.1 Participation

The Scientific Program of IUGG2011 ran from 28 June through to 7 July 2011. It involved more than 3600 scientists from 91 countries. Over the 10 days of the Assembly, delegates participated in 198 Symposia and Workshops comprising 2831

oral and 1926 poster presentations. As well as the 128 Symposia sponsored by the individual Associations and the 64 Joint Symposia sponsored by two or more Associations, there were nine Union Plenary Lectures by eminent scientists, and several speciality workshops held outside the core time of the Assembly.

The total number of scientists attending the IUGG General Assembly was a record high (3368); the distribution of the participants between the eight Associations and 'Union and others' was as follows:

IACS	120
IAG	370
IAGA	536
IAHS	423
IAMAS	607
IAPSO	323
IASPEI	395
IAVCEI	337
Union and others	257

The number of IAGA registrants was smaller than at the previous IUGG meeting in Perugia (669). However, the IAGA presence was remarkable, as IAGA scientists were involved in organising 4 Union symposia, and led 5 Inter-Association symposia; the IAGA-only part of the meeting consisted of 16 symposia, sub-divided into several parts, spanning the full range of IAGA science interests. The IAGA programme began on 29 July and ran through to the end of the General Assembly. As we move out of a period of exceptionally low and prolonged solar activity, space weather issues are going to become more important, especially given mankind's increasing dependence on satellite technology; alongside this, radiation belt studies, and studies of the electromagnetic earth environment, are crucial. Both these themes featured strongly in the IAGA programme. Other highlights included results from the Decade of Geopotential Research, particularly from the three low Earth orbiting magnetometry satellites Oersted, CHAMP and SAC-C, and anticipating the ESA multi-satellite mission Swarm; and the importance of data assimilation in geodynamo and related studies, incorporating techniques developed from other branches of IUGG science, especially meteorology.

The meeting brought many occasion for scientists

to discuss all these topics, over breaks, poster sessions, and at the IAGA dinner, splendidly organised by Past-President Charles Barton!



2.2 Report of the Meetings of the IAGA Conference of Delegates

2.2.1 First Conference of Delegates

Saturday, July 2, 2011

The following reports were presented, the main items of these reports being summarised in the following.

Report of the President	Eigil Friis-Christensen
Report of the Secretary-General	Mioara Manda
Report of the Finance Committee	Michel Menvielle
Report of the Nominating Committee	David Kerridge
Report on eGy Africa	Charles Barton
Report on preparations for the 2013 IAGA Scientific Assembly	Harald Böhnell

In Memorium

The President announced that the following IAGA scientists had died since the previous IAGA Assembly in Toulouse and asked for a minute's silence in their honour:

Jean-Paul Villain	France	2008
Pembroke J. Hart	USA	2008
Richard Doell	USA	2008
Peter M. McGregory	Australia	2008
Roy Piggott	UK	2008
Martin Pomerantz	USA	2008
Ulrich Schmucker	Germany	2008
Jules Aarons	USA	2008
Jim Horwitz	USA	2009
Mario Acuña	USA	2009
Hugo Fournier	Argentina	2009
Peter Weidelt	Germany	2009
Luiz Rijo	Brazil	2009
Mark Berdichevsky	Russia	2009

David Rankin	Canada	2009
Kazuo Nagashima	Japan	2010
Tsutom Tamao	Japan	2010
Takashi Oguti	Japan	2010
Vadim Golovkov	Rusia	2010
Keith Cole	Australia	2010
Valery Troitskaya	Australia	2010
Paul Kintner	USA	2010
B. P. Singh	India	2011
B. J. Srivastava	India	2011
Ingrid Sandahl	Sweden	2011
Ian Gough	Canada	2011
Wilfried Schröder	Germany	2011

A special homage was given to Valery Troitskaya and Keith Cole by the IAGA President, Eigil Friis-Christensen, at the beginning of Dan Baker's IUGG Plenary lecture.



Executive meetings (IAGA and IUGG)

Over the last two years the Executive Committee met formally several times (August 2009, Sopron - (4), and June 2011, Melbourne - (4)), and held a few informal meetings when many members were attending other meetings (December 2009, S.F., USA, AGU fall meeting; July 2010, Berlin, Germany, SCOSTEP/COSPAR; December 2010, S.F., USA, AGU fall meeting).

IAGA Awards

IAGA Award for Interdisciplinary Achievements - Shen Kuo The Award aims to recognize and acknowledge outstanding scientists whose activities and achievements cross several fields of research covered by IAGA.

Shen Kuo 沈括 (1031-1095)



Shen Kuo was a Chinese scientist and statesman of the Song Dynasty (960-1279). His talents and contributions extended to almost every field of learning. He was a gifted mathematician, astronomer, geologist and poet. He provided the first account of a suspended magnet compass; the concept

of magnetic poles; understanding of declination (magnetic poles are not at geographic poles); the concept of true north; and the discovery of dip.

Eligibility Candidates for the Award should be internationally recognized scientists active in several fields of IAGA-related research. The candidates should be nominated by at least one of the following:

- 3 Working Groups from at least 2 Divisions
- 2 Divisions
- 1 Division and 1 Interdivisional Commission.

The nomination may be supported by other scientific bodies outside IAGA with research activities related to those of IAGA. Nominations should include a summary of research activities of the candidate, emphasizing their interdisciplinary character and highlighting the impact of the nominee's activities across the fields of research.

Procedure Nominations should be submitted to the Secretary-General of IAGA during the IAGA Assembly, at latest before the last Executive Committee meeting. IAGA Executive Committee will, upon approval, grant the Award at an official occasion, usually the opening ceremony of the forthcoming IAGA Assembly.

IAGA Medal for Outstanding Long Service



The very last existing IAGA Medal for Outstanding Long Service (see photo) has been awarded. The new series of this medal is under design.

The President announced the award of the 'IAGA Medal in Recognition of Valued Services to the IAGA Community over

Many Years' to Bengt Hultqvist, with a summary of his long activities within IAGA given by the President.



Young Scientist Presentation Awards

These awards are made to younger scientists whose research and presentation of it at topical meetings are judged to be the best. Certificates were presented by the President to the winners of IAGA's 'Young Scientists

Presentation Award'. Three of five winners were present at the ceremony, and Springer was warmly thanked for providing financial support (registration fee) for one of them.

Annika Seppälä – High Energy Particle Precipitation in the Atmosphere (HEPPA) Workshop

Gilda Currenti – International EMSEV-2010 Workshop on Electromagnetic Studies of Earthquakes

Eva Macusova – 4th VLF/ELF Remote Sensing of the Ionosphere and Magnetosphere (VERSIM) Workshop.



IAGA financial situation

The Finance Committee analysed the IAGA financial situation and concluded that at the beginning of 2011, the total amount of IAGA funds was on the order of three times the total expenditure for a year during which there is an Assembly.

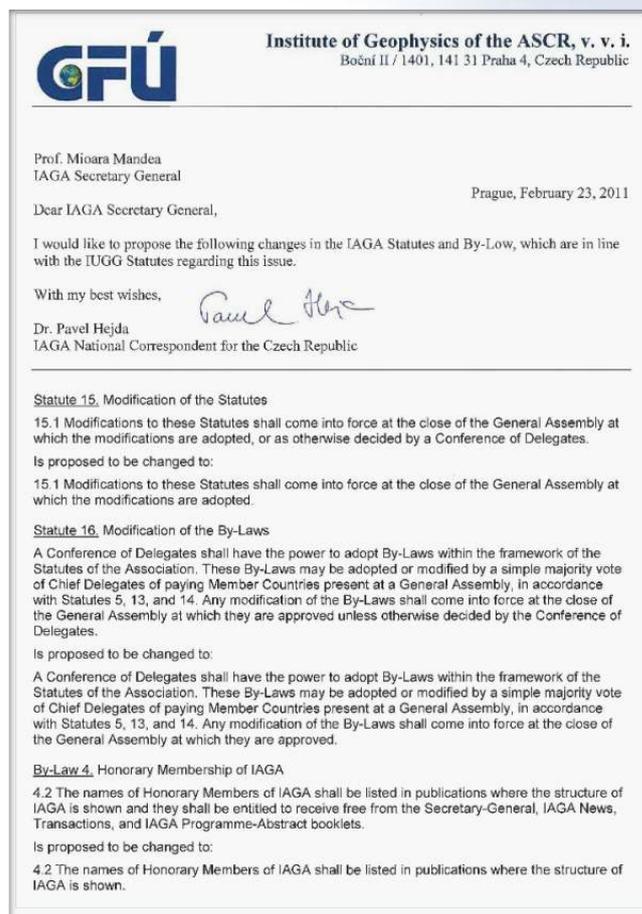
The Finance Committee proposed that this ratio should be maintained, the current policy of limitation of expenditures related to administration should be continued, and that the support to science should be increased, with the objective of an equilibrium between yearly income and expenditure.

Changes to the Statutes and By-Laws

Changes to the Statutes and By-Laws (SBL) were proposed by Pavel Hejda, National Correspondant for the Czech Republic.

He proposed to change **Statute 15** (Modification of the Status), **Statute 16** (Modification of the By-Laws), and **By-Law 4** (Honorary Membership of IAGA). The changes were in line with the IUGG Statutes regarding this issue.

The changes were accepted unanimously, and they are available on the IAGA web.



2.2.2 Second Conference of Delegates: Wednesday, July 6, 2011

Thirty of the thirty-six accredited Chief Delegates were present at the meeting so it was quorate. During this meeting the Secretary-General reported on the three Executive Committee meetings during the IUGG GA. She also reported on the skeleton programme for the IAGA SA built on inputs from Divisions. This programme planning will be defined with the Division leaders and a programme of about the same size as in 2011 is expected for 2013.

Resolutions

Draft resolutions from were presented by the Chair of the Resolutions Committee, Kathy Whaler. They were accepted and are:

IAGA Resolution 1 – Résolution AIGA no 1

(DIVISION I)

IAGA,

CONSIDERING

the value of continuity in magnetic satellite missions to increase our knowledge of Earth dynamics;

NOTING

that no successor to ESA's Swarm mission yet exists;

URGES

the development of missions by national and international agencies to fill this void for the period 2016 onwards.

AIGA,
CONSIDÉRANT

l'importance de la continuité entre les missions satellitaires magnétiques pour l'amélioration de notre compréhension de la dynamique terrestre;

NOTANT

qu'aucune mission n'est actuellement définie pour succéder à la mission Swarm de l'ESA;

EXHORTE

les agences nationales et internationales à développer de nouvelles missions pour combler cette lacune à partir de 2016.

IAGA Resolution 2 – Résolution AIGA no 2

(DIVISION I)

IAGA,
CONSIDERING

the significance of experimental data necessary for understanding the magnetic field and magnetic properties of Earth and Earth-related materials;

NOTING

the increasing demands on technical performance of up-to-date experimental facilities, and associated cost increases;

ACKNOWLEDGES

the scientific value of open and free access to sophisticated experimental facilities offered by certain research institutions.

AIGA,
CONSIDÉRANT

la valeur intrinsèque des données expérimentales nécessaires à la compréhension du champ magnétique et des propriétés magnétiques de la Terre et de ses matériaux compositionnels ;

NOTANT

les exigences croissantes en ce qui concerne les performances techniques d'installations expérimentales de pointe, et l'augmentation des coûts associés ;

RECONNAÎT

la valeur scientifique de l'accès ouvert et gratuit à des installations expérimentales sophistiquées, offert par certains instituts de recherche.

IAGA Resolution 3 – Résolution AIGA no 3

(DIVISION V)

IAGA,
NOTING

the importance of the Dst index for various applications including geomagnetic field modeling, space-weather and -climate studies and detection of local anomalous variations,

RECOGNIZING

that the absolute accuracy of the data from the contributing observatories, Kakioka, Honolulu, San Juan, Hermanus and Alibag, is essential,

RECOMMENDS

that all agencies operating these geomagnetic observatories continue to support both absolute and variation

measurements to maintain the required level of accuracy.

AIGA,
NOTANT

l'importance de l'indice Dst pour de multiples applications et en particulier la modélisation du champ géomagnétique, les études de météorologie et de climatologie spatiale, et la détection de variations locales anormales,

RECONNAISSANT

que la précision absolue des données des observatoires de Kakioka, Honolulu, San Juan, Hermanus et Alibag, qui contribuent au calcul de l'indice Dst, est essentielle,

RECOMMANDE

que toutes les agences en charge de ces observatoires magnétiques poursuivent leur soutien aux mesures absolues et aux mesures des variations pour maintenir le niveau de précision requis pour le calcul de l'indice.

IAGA Resolution 4 – Résolution AIGA no 4

(DIVISION V)

IAGA,
CONSIDERING

the importance of homogeneous magnetic anomaly data coverage for global geological studies,

URGES

the owners of airborne and marine magnetic anomaly data sets, in particular from equatorial areas and the southern hemisphere, to release them into the public domain as soon as possible.

AIGA,
CONSIDÉRANT

l'importance, pour les études géologiques globales, de la couverture spatiale homogène des données d'anomalies magnétiques,

EXHORTE

les détenteurs d'ensembles de données d'anomalies magnétiques aéroportées ou marines, en particulier pour les zones équatoriales et pour l'hémisphère sud, à rendre dès que possible ces données disponibles dans le domaine public.

Election of Officers for the 2011 - 2015 Quadrennium

The election process was conducted using the scheme proposed by David Kerridge, Chairman of the Nominating Committee, and approved by the Conference of Delegates. The newly elected Executive Committee members are:

PRESIDENT: Kathryn Whaler (UK)

VICE-PRESIDENT: Eduard Petrovsky (Czech Republic)

MEMBERS:

Archana Bhattacharyya (India)

Iver Cairns (Australia)

Jeffrey Forbes (USA)

Toshihiko Iyemori (Japan)

Monika Korte (Germany)

Laszlo Szarka (Hungary)
Andrew Yau (Canada)

New Leadership of Divisions and Commissions

The Conference of Delegates found the geographical distribution of proposed post-holders to be satisfactory and accepted the list of new leaders of the Divisions and Commissions proposed by the Executive Committee on the basis of information from the Business Meetings.

DIVISION I:

Chair: Gauthier Hulot (France)
Co-Chair: Yasuo Ogawa (Japan)

DIVISION II:

Chair: Dora Pancheva (Bulgaria)
Co-chair: Paulo R. Fagundes (Brazil)

DIVISION III:

Chair: Larry Kepko (USA)
Co-chair: Clare Watt (Canada)

DIVISION IV:

Chair: Xing Li (UK)
Co-chair: John Richardson (USA)

DIVISION V:

Chair: Alan Thomson (UK)
Co-chair: Pieter Kotzé (South Africa)

INTERDIVISIONAL COMMISSION ON DEVELOPING COUNTRIES:

Chair: Inez S. Batista (Brazil)
Co-chair: Pieter Kotzé (South Africa)

INTERDIVISIONAL COMMISSION ON HISTORY:

Chair: Ronald Doel (USA)
Co-chair: David Boteler (Canada)

The list of Working Groups leaders are available on the IAGA page: http://www.iugg.org/IAGA/iaga_pages/science/sci_structure.htm.

Liaison persons

IAGA Executive Committee nominates the following scientists to be the liaison persons with different bodies:

COSPAR: Eric Donovan (Canada)
SCOSTEP: Vladimir Kuznetsov (Russia)

IUGG Commissions:

SEDI: Cathy Constable (USA)
Dominique Jault (France)
CGM: Matthias Holschneider (Germany)
GRC: David Boteler (Canada)
Alan Thomson (UK)
UCDI: Anatoly Soloviev (Russia)
Peter Fox (USA)

3 Reports on Meetings: IAGA-Sponsored or with IAGA interest

3.1 4th IAGA/ICMA/CAWSES-II TG4 Workshop on Vertical Coupling in the Atmosphere/Ionosphere System

February 14-18, Prague (Czech Republic)

The 4th IAGA/ICMA/CAWSES-II TG4 Workshop on "Vertical Coupling in the Atmosphere/Ionosphere System" was held at the Hotel Globus located in a quiet Prague district, Czech Republic, February 14-18, 2011. The meeting was attended by a total of 75 senior and young scientists from 16 countries. During the 5 days of the workshop the participants presented 79 papers, of which 16 were solicited presentations. Before the official opening of the workshop there were two public/educational lectures (by Esa Turunen and Mike Taylor) attended mainly by students from Prague grammar schools and University. The aim of this workshop was not only to address the physics behind the forcing mechanisms that originate in the lower atmosphere and play an important role on the upper atmosphere and ionosphere, but also to show the solutions of some of the problems which were only formulated during the 3rd IAGA/ICMA Workshop held five years ago in Varna, Bulgaria. The meeting was designed so that research experts from both the middle and upper neutral atmosphere and ionosphere communities came together in order to present their work and assess/debate ongoing issues relating to the theoretical, modelling and observational aspects of all kinds of processes which transfer energy and momentum from the lower atmosphere to the upper atmosphere and ionosphere and vice versa. The presentations at this Workshop will be published in a special issue of JASTP. The team of Guest Editors includes: Dora Pancheva (Geophysical Institute, BAS, Sofia, Bulgaria), Petra Koucká Knížová (Institute of Atmospheric Physics, CAS, Prague, Czech Republic), Kazuo Shiokawa (Solar-Terrestrial Environment Laboratory, Nagoya University, Japan) and Weixing Wan (Institute of Geology and Geophysics, Chinese Academy of Sciences, China).

Petra Koucká Knížová
Chair of the Organizing Committee

3.2 3rd International High Energy Particle Precipitation in the Atmosphere (HEPPA) Workshop

May 9-11, Granada (Spain)

In recent years, many new satellite instruments capable of polar region observations have been launched. This, together with recent state-of-the-art modeling efforts, has provided unique opportunities to study the effects of energetic particle precipitation (EPP) on the atmosphere. The Finnish Meteorological Institute organized the 1st International High Energy Particle Precipitation in the Atmosphere (HEPPA) Workshop, 28-30 May, 2008, and the

National Center for Atmospheric Research in Boulder, Colorado, USA organized the second one. Both workshops were so successful that we organized the 3rd International HEPPA Workshop on 9-11 May 2011 (HEPPA-2011) in Granada (Spain) hosted by Instituto de Astrofísica de Andalucía (IAA) of the Spanish Research Council (CSIC). It was jointly sponsored by IAA, CSIC, IAGA, and the Spanish Ministry for Research and Innovation (MICINN). Like the other two workshops, HEPPA-2011 focused on observational and modeling studies of atmospheric and ionospheric changes caused by EPP and included a new session on climate and EPPs.

HEPPA-2011 brought together 64 participants from Canada, Chile, Finland, Germany, Italy, Japan, Norway, Russia, South Africa, Spain, Sweden, Switzerland, UK and USA. The workshop consisted of invited tutorials that were targeted at a level to bring together people from various disciplines, as well as invited talks, contributed talks, and contributed posters. A total of 51 oral and 15 poster presentations were given.

The third HEPPA model / measurement inter-comparison working meeting was also held on Thursday 12 May 2011. Tutorials and invited talks were presented on topics including the Earth's radiation belts, solar and galactic sources of energetic particles, cosmic rays, satellite measurements of energetic particles, sub-ionospheric VLF and measurements of energetic particles, effects of EPPs on the thermosphere/ionosphere, mesosphere and stratosphere, processes that govern vertical coupling in the atmosphere, solar influences on climate and on future measurements.

Manuel López-Puertas
On behalf of the Scientific Committee

3.3 IAGA-III-Symposium Heliospheric Physics during and after a deep solar minimum

November 13-17, Luxor (Egypt)

The goal of the Symposium was to maintain the momentum generated by previous Symposia by organizing this further Symposium entitled 'Heliospheric Physics during and after a deep solar minimum' at which the global community could again share their latest research works, cooperate from different fields of solar and space research, and discuss the consequences and effects of a deep solar minimum. The Symposium focused on the fundamental problems of Solar physics and the Solar Cycle and their related physical effects on the Space Environment including the outer atmosphere and interplanetary space. The presentations and discussions at this Solar and Space Weather symposium also focused on identifying the highest priorities needed for operational services that can guide future research, and on identifying new high-value capabilities that can be translated into operations.

The scientific topics presented at the Symposium were: Solar cycle prediction techniques; Source regions of the solar wind at solar activity minimum and associated modeling; The impact of prolonged solar minima on global

climate change; Solar Wind at the time of solar minimum and of the rising phase of cycle 24; Physics, dynamics, and behavior of the Sun-Earth system over the 11-years solar cycle; Particle acceleration near the Sun and in the Heliosphere under quiet and active solar conditions; The Heliosphere in the local interstellar medium; and Solar variabilities, Space Weather and geo-hazards. The IAGA-III Symposium participants were 48 participants from 21 countries distributed all over the world: Bulgaria, Cyprus, Egypt, France, Germany, Greece, India, Iran, Italy, Kazakhstan, Korea, Morocco, Mexico, Nigeria, Russia, Saudi Arabia, South Africa, Ukraine, USA, and Zambia.

During the meeting eight sessions were organised, 13 papers being review or invited lectures. In addition, 26 papers were accepted as oral contributions and 11 as poster contributions. The articles resulting from these presentations and posters, upon review, will be published in a special issue of the Cairo University Journal of Advanced Research, an Elsevier publication.

Ahmed Abdel Hady
On behalf of the Scientific Committee

3.4 Second Biennial Meeting of the Latin-American Association of Paleomagnetism and Geomagnetism (Latin-Mag)

November 23-26, Tandil (Buenos Aires, Argentina)

The Second Biennial Meeting of the Latin-American Association of Paleomagnetism and Geomagnetism (Latin-Mag) was held in Tandil (Buenos Aires, Argentina), on November 23-26, 2011. This was a great opportunity for updating the latest scientific advances in paleomagnetism, geomagnetism, rock magnetism, archeomagnetism, magnetostratigraphy, environmental magnetism, magnetofabrics and magnetic surveying; promoting the meeting of colleagues in a pleasant and friendly environment in order to enhance personal and institutional ties. Although the main objective of this meeting is related to Latin-American research issues, all colleagues who are working in similar international matters were very welcome. LATINMAG brought together 86 participants from Argentina, Brazil, Bulgaria, Czech Republic, Chile, Colombia, France, Italy, Germany, Mexico, Spain, Uruguay, USA and Venezuela. It was important that our meeting was attractive, in particular to young researchers: 31 graduate and undergraduate students took part in the conference. The venue was the University Cultural Center of the National University of the Centre of Buenos Aires Province, suitably located in the downtown of Tandil, a beautiful city in the heart of the Argentine Pampas.

The scientific part of the conference consisted of four sessions (Session A: Geomagnetism - Geophysics Methods, Session B: Paleomagnetism - Tectonics, Session C: Archeomagnetism, Paleointensity, Paleosecular Variations and Session D: Rock Magnetism - Environmental Magnetism), which included 46 oral (15 invited and 31 regular) and 61 poster presentations. Two half-day courses

took place during the meeting, given by Leonardo Sagnotti and Edgardo Cañón-Tapia. Martin Chadima delivered two short courses on application of magnetic susceptibility as a function of temperature, field and frequency and recent advances in anisotropy of magnetic remanence. A special talk about the MagIC System was given by Monika Korte and Ricardo Trindade. In parallel, three conferences open to the whole community, in particular, students of high school age, were delivered by Avto Gogichaishvili, Augusto Rapalini and Leda Sánchez.

The scientific activities were accompanied by a rich social program, including beer-tasting and a city tour to the most important tourist sites in Tandil. In the closing ceremony, the participants enjoyed a great barbecue on a traditional Argentine farm and also a tango show, especially prepared for the occasion. In this ceremony, Dr. Juan Vilas was awarded with the 'Trajectory Prize' from LatinMag for his outstanding contribution to the field of geophysics and 2 students got Certificates of Outstanding Student presentation (Jairo Savian, Brazil and Cecilia Weidmann, Argentina).

The Proceedings with all extended abstracts of the meeting were published as volume 1, number 2 of the electronic journal LatinMag Letters, an open and free access journal published by the Latin American Association of Paleomagnetism and Geomagnetism (<http://www.geofisica.unam.mx/LatinmagLetters/LL11-0102P/LL11-01P-idx.htm>). Financial support, provided by IAGA, was greatly appreciated, and used to support the participation of ten young scientists from developing countries, which included travel expenses and waiving of registration fees.

Claudia Gogorza
On behalf of the Organizing Committee

3.5 The 1st ICSU World Data System Conference

The 1st ICSU World Data System Conference – Global Data for Global Science – was held on September 3-6, 2011 at Kyoto University, Kyoto, Japan. This conference was the first international meeting of the WDS to provide an opportunity to receive opinions, comments and suggestions from scientific communities (data users) and about other international data systems to establish the active plan of WDS. About 155 participants from over 22 countries attended. Participants included representatives of data centres, data scientists and engineers working in a variety of fields, as well as data publishers. The conference was held 6 months after the 2011 Tohoku earthquake. In this exceptional context a session on disaster data was organized in collaboration with the ICSU co-sponsored Integrated Risk and Disaster Research (IRDR) programme and the Disaster Prevention Research Institute at Kyoto University.

The 59 talks and over 70 poster papers enabled the nascent WDS community to engage in effective scientific collaboration and provided a constructive forum for lively exchanges of views and ideas. Important feedback was

also provided to the WDS Scientific Committee during a Members' and Partners' open forum. The conference was also an opportunity to initiate a dialogue with WDS stakeholders and important partners such as the Committee on Data for Science and Technology (CODATA) and the International Oceanographic Data and Information Exchange (IODE). The conference was sponsored by the ICSU WDS International Programme Office hosted by the NICT, the ICSU/WDS Scientific Committee, the Science Council of Japan, and the Graduate School of Science, Kyoto University. More details can be found on the conference website: <http://wds-kyoto-2011.org>

Iyemori Toshihiko

3.6 EMSEV Inter-Association Working Group 2011 activity

On behalf of IUGG, the EMSEV Inter-Association Working Group (WG) promotes 'Electromagnetic Studies of Earthquakes and Volcanoes'. The EMSEV WG is primarily supported by IAGA, IAVCEI and IASPEI, because our research needs expertise in the fields of electromagnetism, wave propagation through Earth and ionosphere, physics of the Earth, physics of fault rupture and volcanic eruptions, geochemistry, hydrogeology, laboratory experiments, complex data processing and modelling. Information on EMSEV activities can be found at <http://www.emsev-iugg.org/emsev/>. EMSEV priorities are carried out in three main domains. The first priority is to organize international and regional meetings, and host EM sessions at international conferences in which new findings and recent studies are debated and endorsed. Every year, EMSEV's community holds a business meeting during which research, activities and projects are discussed and new research topics are taken up. In addition, EMSEV organizes every two years international meetings, in which research from emerging countries are presented. The next EMSEV meeting will be held in Japan on September 30 - October 4, 2012 (see <http://www.emsev-iugg.org/emsev2012/> for details).

The second priority is to promote strongly international cooperation between individuals and research teams at the international scale. EMSEV encourages new research on earthquakes and volcanic eruptions, builds relationships between Research Institutes and EMSEV members, and signs Memorandums of Understanding (MOU) which insure long term cooperation and support, such as those with the Philippines Institute of Volcanology and Seismology (PHIVOLCS, <http://www.phivolcs.dost.gov.ph/>) in Volcanology and with the International Geophysical Research Centre and Bishkek Research Station in Kyrgyzstan (<http://www.gdirc.ru/en>) on the physics of earthquakes.

The third domain in which EMSEV is dynamic may be called 'EMSEV research and education activities'. The objective is to develop fundamental and applied research with developing countries and large Institutes on topics

which can lead to new findings and progress on risk mitigation in Volcanology and on Earthquakes. Two programs are now ongoing in the Philippines and in Kyrgyzstan.

J. Zlotnicki, M.J.S. Johnston, T. Nagao

3.7 eGYAfrica Workshop, Accra 2010

eGYAfrica evolved from the Electronic Geophysical Year (www.egy.org) in response to the need for better Internet connectivity for research and education in Africa i.e., to help reduce the digital divide. The objective is to strengthen research and education in Africa to serve national interests and to increase African participation in international science.

The two-day eGYAfrica Workshop and planning meeting, held in Accra in November 2010, was supported through a grant from IUGG, together with additional support from IAGA. Seven African countries were represented. The first day focussed on Internet issues in Africa, particularly the digital divide, the rapid expansion of fibre-optic cabling around and within Africa, and the development of National Research and Education Networks (NRENs).

The PingER Project that measures end-to-end Internet performance shows, despite this impressive progress, that a digital divide persists in Africa that hampers progress. Limitations at the institutional level are often an important factor.

The second day was devoted to eGYAfrica review and planning. A solid working relationship was established with the Association of African Universities (Boubakar Barry, Head of the NREN Unit), and with ICSU's Regional Office for Africa in Pretoria (Daniel Nyanganyura). Workshop participants were pleased with the progress of eGYAfrica and were enthusiastic about its future; officers were elected for the eGYAfrica Committee for the next 2 years, and a monograph based on the themes of eGYAfrica and the developments of NRENs in Africa is planned. A key activity of eGYAfrica is to establish national groups who will seek to influence decision-makers. This is currently being pursued in Cote d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria, Rwanda, Senegal, and South Africa. The importance of working through existing groups when possible was emphasized.

A full report about the Workshop is at: <http://dl.dropbox.com/u/31851729/eGYAfrica%20Workshop2010.doc>

V. Chukwuma, A. Mebrahtu, C. Barton

4 Deceased IAGA Scientists

Ian Gough (1922 - 2011)



Ian Gough was born on 20 June 1922 in Port Elizabeth, South Africa. He received a B.Sc and M.Sc. from Rhodes University (in 1943 and 1947, respectively), and a Ph.D. from the University of Witwatersrand in 1953. From 1947 to 1958 he worked as a researcher at the South African Council

for Scientific and Industrial Research, before moving to academe where he spent the rest of his career. In the years 1958-1963 he was at the University College of Rhodesia and Nyasaland (in what is now Harare, Zimbabwe), followed by a short period (1964-1966) at the Southwest Center for Advanced Studies in Dallas, Texas. Thereafter, he moved to the University of Alberta in Edmonton, Canada where he remained on the faculty until his retirement in 1988.

Ian had a rich and productive research career in his chosen field of geophysics. He published more than 100 papers in first-class international scientific journals, and made seminal contributions to a very wide range of topics in the earth sciences. He belonged to a generation of scientists who approached scientific work very much from first principles. Given a need to bring observations to bear on a particular problem, he set about designing, constructing, and operating the necessary apparatus. I well remember him preparing the unique Gough-Reitzel magnetometers for an upcoming field season – rows of vertical metal tubes standing to attention like a squadron of soldiers on parade. And each one containing a sensitive magnet system and an ingenious home-made camera. He was simultaneously commanding officer, quartermaster, and chief mechanic. One thinks of Newton polishing mirrors for his own telescope, or of Faraday co-opting a giant link from an anchor chain to construct his electromagnet. Deployed as arrays across wide stretches of North America, South Africa, and Australia, Ian's magnetometers revealed hitherto unknown structures in the Earth's crust, such as an ancient plate-tectonic boundary stretching more than 1000 km through the Canadian Shield and down into Wyoming.

Another example of this hands-on way of doing science was the Gough spinner magnetometer, built in the days when nothing was available off-the-shelf, but at a time when the ability to measure the weak 'fossil' magnetism in rock samples was crucial to establishing the reality of the way in which the Earth's magnetic poles, and the continents themselves, have drifted about over huge distances; the sort of data which would ultimately underpin the modern theory of plate tectonics. These examples are but two from a long list that includes the accurate determination of the amount of thermal energy flowing out of the Earth, the seismic activity induced by the filling of large reservoirs, and the speculation that the supercontinent Gondwanaland was cracked apart by the weight of

an ice cap hundreds of millions of years ago. And this is by no means an exhaustive list.

Dedicated as he was to his own research, Ian was also committed to playing a leadership role in the scientific community at large. He served as President of IAGA, President of the Canadian Geophysical Union, and as Director of the Institute of Earth and Planetary Physics (now the Institute for Geophysical Research) at the University of Alberta. He was also instrumental in setting up Canada's highly-acclaimed national geosciences program Lithoprobe. Ian Gough's contributions to geoscience were recognized nationally and internationally. He was awarded the Canadian Geophysical Union's J. Tuzo Wilson Medal (1983), the Royal Astronomical Society's Chapman Medal (1988), and the South African Geophysical Association's Rudolf Krahnemann Medal (1989). He was also a Fellow of the Royal Society of Canada, the American Geophysical Union, and the Geological Association of Canada.

During his last field work in South Africa, Ian discovered a taste for writing poetry and after his retirement turned to that. He remarked more than once that doing this was more difficult than geophysical research! Nevertheless, in 2006 he published 'Signing the Light', a book of poetry that reveals a sensitive and caring nature. Ian was always a thoughtful and courteous colleague, mentor, and friend. He inspired and unfailingly supported generations of students, post-doctoral fellows, and younger faculty members. His passing is a great loss to us all, but his example of a life well lived, of commitment and service, is a legacy of which we are all the beneficiaries.

Ted Evans
University of Alberta, Edmonton, Canada

Wilfried Schröder (1941 - 2011)

Wilfried Schröder, Topical Editor of the journal 'History of Geo- and Space Sciences', passed away on 12 April 2011. He was born on 10 August 1941 in Bremen. He studied mathematics, physics, and geophysics at the Universities of Göttingen, Berlin and Münster and became a highschool teacher. From the very beginning of his studies he got interested in science history. Around 1960 he founded the 'Geophysikalische Forschungsstation' in Bremen-Röönnebeck as a one-person business. He undertook observations on noctilucent clouds and aurora, but his main work was the publication of books and scientific articles on science history. He received a doctoral degree from the University of Bremen in 1981. After an early retirement from his teaching duties he could fully concentrate on his scientific interests. These were very widespread, touching almost all fields of external geophysics history, but mainly auroral research, solar terrestrial relations, geomagnetism, upper atmospheric physics, and noctilucent clouds.

In the 1980s Schröder became involved in the Interdivisional Commission on History of IAGA. According to a friend he 'constructed' this Commission: "I remember when its sessions had at most 10-20 participants, including the relatives of the speakers. After his great involvement in promoting historical studies, I found that it became eventually embarrassing (we were in Birmingham) realizing that a room with a few hundred seats was insufficient,

and several people were listening to the session out of the door. This was the result of Wilfried's promotion!" The Interdivisional Commission on History of IAGA became a unique active body dealing with history of Earth sciences within the entire IUGG, not only of IAGA. He remained active in this Commission by convening sessions and other organizational work until 2005. In order to publish and circulate scientific contributions presented at the IAGA and IUGG symposia he founded his own publishing enterprise 'Science Edition - Potsdam/Bremen' financed mostly with his own money. Many well recognized books were published in this edition, like *Das Phänomen des Polarlichts*, 1984; *Noctilucent Clouds and Mesosphere: a historical Review*, 2007; *Einstein und die Geophysik*, 2004; *The aurora in time*, 2000. His aim was to publish inexpensive books, in order that they could have a great circulation, and to give many authors an opportunity to publish their work. In this endeavour, Schröder never had any institutional support. Besides, based on his own research, he published more than 200 papers in well-known peer-reviewed journals.

He was particularly interested in the origin and development of new scientific ideas and in the scientists involved, and was fascinated by the search for the intellectual steps of past scientists who left a heritage to us with their wisdom and achievements. He thus published several articles on well-known physicists and geophysicists, like Hermann Fritz, Alfred Wegener, Emil Wiechert, Albert Einstein, Arnold Sommerfeld, and Werner Heisenberg. He also maintained a correspondence with Sidney Chapman and with the philosopher Karl Popper. Even before German reunification, Schröder kept close contact and a vivid correspondence with important scientists of the former GDR, like Hans-Jürgen Treder (theoretical physics) and Hans Ertel (geophysical hydrodynamics). Together with Treder he founded the 'Arbeitskreis Geschichte der Geophysik und Kosmischen Physik' (German Commission on History of Geophysics and Cosmical Physics). He was not only active in the IAGA History Commission but also a member of several other scientific organizations and societies: Deutsche Geophysikalische Gesellschaft, Deutsche Physikalische Gesellschaft, Leibniz-Societät, Max-Planck Gesellschaft, American Geophysical Union, and INHIGEO (International Commission on the History of Geological Sciences). Schröder's experience and international contacts were very important and valuable in establishing the journal: *History of Geo- and Space Sciences*. Wilfried Schröder will be missed by many, including the authors of this obituary and other scientists who shared his deep and abiding interest in historical matters.

K. Schlegel
Copernicus Gesellschaft e.V., Göttingen, Germany
and
G. Gregori
Institute of Acoustics "O. M. Corbino", Rome, Italy

Bhisham Prasad Singh (1937 - 2011)

Bhisham Prasad Singh was born on August 18, 1937 in Bihar, India. He obtained an M.Sc. degree from Bihar University, and a Ph.D. degree from Queens University, Canada in 1972. From 1958 to 1965 he worked as a Lecturer at Ranchi University, Bihar. He was a Scientist

at the Physical Research Laboratory, Ahmedabad during 1972-73, before moving to the Indian Institute of Geomagnetism (IIG) where he spent the rest of his career. He was the Director of IIG from 1991 until his retirement in 1997.

Bhisham Singh was instrumental in starting 'Solid Earth Geomagnetism' as a distinct division at IIG. The geomagnetic depth sounding studies he initiated in India in the 1970s in collaboration with Dr. F.E.M. Lilley of Australian National University and Dr. B. J. Srivastava of the National Geophysical Research Institute in India led to the generation of a sub-surface electrical conductivity map for India. Magnetotelluric and Ocean Bottom Magnetometer research at IIG were also introduced by him. He played the leading role in the development at IIG of research using MAGSAT data.

He will be remembered for his valuable contributions to the growth of IIG. He published more than 125 papers in international and national journals, and provided guidance to several students in their Ph.D. degree work. During his tenure as Director, IIG had extensive scientific collaboration with IZMIRAN. He was elected a Fellow of the National Academy of Sciences, India; Indian Geophysical Union, Association of Exploration Geophysicists, and Geological Society of India.

He also played an active role in the National and International scientific community. He was the National correspondent of India for IAGA. He was elected Vice-Chairman, Division I (Internal fields) of IAGA for the period 1987-1991, and during this period he was also a member of Working Group (I-3) of IAGA on Electromagnetic Induction in Earth and Moon. He served as a member of the Executive Council, Indian Geophysical Union; Member-Secretary, National committee of the Indian National Science Academy for IUGG; and Member, Mining Geological and Metallurgical Institute of India, Mumbai. He was also a member of the sub-committee on Marine Geology for the Geological Survey of India, and a member of the National coordination committee for Antarctic programs of the Department of Ocean Development, of the Government of India.

Bhisham Singh was always a helpful colleague and mentor. He encouraged students and younger faculty members to strive for excellence in their research. He expired on February 19, 2011 after a prolonged illness. His passing is a great loss to the geosciences community in India, and in particular for those scientists who work in the area of geo-electromagnetism.

G. Gupta and A. Bhattacharyya
Indian Institute of Geomagnetism, Navi Mumbai, India

Ingrid Sandahl (1950 - 2011)

Ingrid Sandahl passed away on 5 May 2011. She was 61 years old. This is a great loss not only for her family and friends but also for our field of research. Ingrid was an active scientist at the Swedish Institute of Space Physics, IRF, until just a few days before cancer ended her life.

Ingrid became the first female scientist at IRF in 1975 after having spent one and a half years working with Arctic research in Canada. She was an enthusiastic person in

our field of science and had a large network of international friends. Ingrid was heavily involved in collaborative projects and was a visiting scientist at the Geophysical Institute, University of Alaska, Fairbanks, in 1989, at the Institute of Space and Astronautical Science, Japan, in 1996/1997 and a visiting professor at the National Institute of Polar Research, Japan, in 2007. She was made a member of several societies, e.g., the Royal Swedish Academy of Science in 1998, and acted as IAGA National Correspondent. She became Professor of Space Physics at IRF and Umeå University in 1999.

Auroral physics was always a major field of interest for Ingrid. She started working at IRF with sounding rocket experiments and charged particle instrument development and testing. She also spent several years working with magnetospheric physics and satellite instruments. Auroral phenomena using ground-based observations were her major research interest in recent years. She was head of one of the research programmes at IRF and had been responsible for its observatory programme since 2010. Ingrid had a deep engagement in coordinating the Nordic optical network. Her scientific contributions consisted not only of academic papers about auroral particle acceleration, auroral morphology and solar-terrestrial relationships – she also had a great interest in auroral science history, and made many appreciated presentations to students and the general public as well as to the press and other media.

Ingrid was an excellent host, taking good care of visitors in Kiruna. Many friends and colleagues will remember the pleasant evenings spent in her home, planning for future projects or just having a good time.

Lars Eliasson
Swedish Institute of Space Physics, Kiruna, Sweden

5 General information about IAGA

5.1 IAGA books series published by Springer

One of the most important achievements of IAGA during the last two years was to publish, with Springer, a series of five books, representing results obtained by the IAGA five divisions over recent years. As well as providing useful reference texts, the income to IAGA from Springer for this venture was used to support scientists to attend the last SA in Sopron, Hungary. The previous Secretary-General devoted considerable time and effort to seeing this project through to completion, and the current Secretary-General would like to thank warmly everyone who showed support during the preparation of these manuscripts, and is grateful for the time taken by colleagues and friends to provide valuable information and data, comments and encouragement, as authors, editors or referees.



5.2 IAGA guides

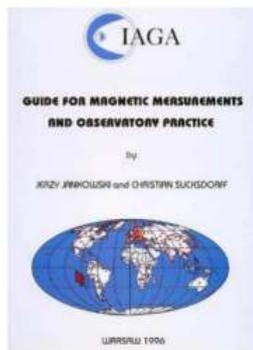
IAGA has published four practical guides to observation. These may be ordered from the Secretary General and they are also available at the IAGA web site.

IAGA Guide for Magnetic Measurements and Observatory Practice

by J. Jankowski and C. Sucksdorff, 1996, 232 pages, ISBN: 0-9650686-2-5; Price: USD 50.

This Guide provides comprehensive information about how to organize and run a magnetic observatory and make magnetic measurements. The main topics are:

- A brief description of the magnetic field of the Earth
- Selection of observatory sites and layout
- Magnetometers
- Absolute magnetic measurements
- Recording of magnetic variations
- Data processing
- Testing and calibrating instruments

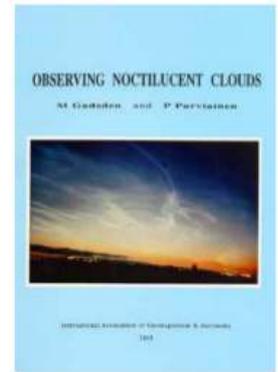


IAGA Guide for Magnetic Repeat Station Survey

by L.R. Newitt, C.E. Barton, and J. Bitterly, 1997, 120 pages, ISBN: 0-9650686-1-7; Price: USD 25.

This Guide provides a comprehensive description of the theoretical basis, operational details, and instrumentation for making magnetic repeat station survey measurements.

This manual and instruction book was written by a group of active researchers, both professional and amateur. There are chapters giving practical advice for taking visual observations, photographing the clouds with film or with video equipment. A summary of observations from space is included, as well as comments on the connection between noctilucent clouds, seen from the ground, and the polar mesospheric clouds that so far have been measured only from orbit. Noctilucent clouds are seen in the summer months, shining in the poleward sky at night-time. Measurements show that the clouds are higher than any others. Lying at a height of 80-85 kilometres, the clouds mark a boundary between meteorology and space physics. This book is beautifully illustrated with photographs, and will help everyone recognize and appreciate these "sailors in the summer night".



This guide is out of print but it is available at the web site using the link [ONC](#). (Prices do not include shipping and handling.)

5.3 IAGA web

Information on IAGA can be found at: <http://www.iugg.org/IAGA>

5.4 IAGA contact

The Secretary-General is the main point of contact for all matters concerning IAGA:

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