

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 IAGA activities over the year 2016, with a forward look at preparations for the Scientific Assembly in 2017. Indeed, I am thrilled to welcome you to the 2017 Joint IAPSO-IAMAS-IAGA Assembly which will take place from 27 August to 1 September 2017 at the Cape Town International Convention

Centre (CTICC), South Africa. Cape Town acts as an environmental gateway to many of our scientific interests and thus provides an ideal scientific destination for an international conference on various earth system studies. I look forward to seeing as many of you as are able to attend in Cape Town next summer.

This issue also contains reports on IAGA activities of different kinds and provides information about recently deceased IAGA scientists. In its present form, IAGA News contains only brief summaries of different activities and topics; the reader is referred to the newly designed IAGA website (www.iaga-aiga.org) for more details. Information on activities at Division level can be found on each Division's website.

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

Mioara Mandaia
(Secretary-General)

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IAGA on the Web

Information on IAGA is regularly updated at the IAGA site:

<http://www.iaga-aiga.org/>

1 Message from the President



Dear friends and colleagues, dear Geomagnetists and Aeronomers, It might seem that a year without an IAGA assembly is not that busy. However, the contrary is true; this year was full of small events and actions, organized from the bottom, which are (and should be also in the future) the core of IAGA activities. Later in the IAGA News you will

find more details in reports from these topical meetings, organized by the IAGA working groups. I had the opportunity to personally attend two of them. The first one was a must for me, the 15th “Castle Meeting” on Paleo, Rock and Environmental Magnetism, excellently organised by our Belgian colleagues in Dinant, Belgium. I would like to highlight the number of young researchers, i.e. graduate and undergraduate students, comprising about 30 out of some 90 participants at the meeting. And they performed very well, giving excellent presentations, as pointed out by the jury that evaluated the students’ presentations. This promising trend will hopefully be maintained in the future. A summer school for students was organised in the preceding days at the Geomagnetic Observatory in Dourbes, which was attended by some 20 students from all around the world. The excellent informal atmosphere and enthusiasm of all the lecturers contributed significantly to the success of the event and to the reputation of IAGA amongst the younger generation. The other meeting I attended was the 17th Geomagnetic Observatory Workshop in Dourbes, Belgium. It was my first time at this meeting and I am happy to say that the event was great from both the point of view of the scientific level and the general workshop and family-like atmosphere.

Next year we are heading for the scientific assembly, which will be held jointly with IAMAS and IAPSO in Cape Town, South Africa. Thanks to great effort of all the conveners, working group and division leaders, and our Secretary General, 44 IAGA symposia and 4 joint symposia led by IAGA represent a great appeal and “magnetism” to many of us. Moreover, the 3rd IAGA Summer School will be held during the days before the Assembly. I firmly believe that these events will be well attended and will represent memorable events in the IAGA records.

I would like also to mention that we were also active with respect to other organizations and upon their request we nominated our representatives in, e.g., the revitalised IUGG Union Commission for Data and Information. Last but not least, IAGA contributed to the IUGG Strategic Plan for 2016-2023 (many thanks are due to Mioara and Kathy for this).

And not to forget, it is my great pleasure to mention that our Mioara is awarded the National Order of Merit by the decree of the French President for her outstanding scientific career and public service. She will be raised to the rank of Chevalier (Knight) at a special ceremony. Congratulations to Mioara!

To conclude, I am very optimistic with respect to the future; IAGA is viable, with a sizeable number of active colleagues serving the community, and with a promising growth in the number and quality of our young researchers. I only hope that this will be confirmed by the participants at the forthcoming IAGA scientific assembly in Cape Town. Despite this being a remote location for many, this event should become a highlight of next year. Finally, let me wish you all the best in your work, as well as in your personal life, and I look forward to seeing you next year in Cape Town.

Eduard Petrovsky
(President)

2 Preparation for the 2017 Joint IAPSO-IAMAS-IAGA Scientific Assembly

For the 2017 joint IAPSO-IAMAS-IAGA Scientific Assembly the route is to South Africa!

South Africa is host to many National Research Facilities including the Hermanus Magnetic Observatory (where IAGA plans to organise the 3rd Summer School), South African Institute for Aquatic Biodiversity, South African Environmental Observation Networks and many others that will be of interest to the participants.

The meeting will bring many occasion for scientists to discuss a wide range of topics, over breaks, poster sessions, and the IAGA special dinner party!

Time and Place

The 2017 Joint IAPSO-IAMAS-IAGA Scientific Assembly will be organised in Cape Town, South Africa. The Joint Assembly, endorsed by the

University of Cape Town and the South African Department of Science and Technology, will take place from 27 August to 1 September 2017 at the Cape Town International Convention Centre (CTICC).

Local Organising Committee The Local Organising Committee (LOC) comprises of a mix of young early career scientists as well as established researchers in all three earth disciplines. In addition, many of the LOC members are currently committee members of the IUGG -South Africa National Committee.

The Local Organising Committee (LOC) is chaired by Isabelle Ansorge (University of Cape

Town).

Key dates

- 1 Sept 2016: Registration Opens
- 17 Feb 2017: Deadline for Submission and Grant Application
- 7 April 2017: Notification of Acceptance
- 21 April 2017: Notification of Programme Allocation
- 5 May 2017: Early Bird Registration Deadline

More information

Detailed information on programme, abstract submission, registration, accommodation, venue are provided:

<http://www.iapso-iamas-iaga2017.com/>

3 Swarm mission – probing the geomagnetic field

Three years into operations since its launch in 22 November 2013, the Swarm constellation is providing excellent measurements of the Earth's magnetic field and associated plasma environment. The user community is achieving unprecedented scientific results and exploring new applications.

All three-satellite platforms are performing very well, essentially free of any anomalies, and the space segment constellation orbit geometry evolves in line with expectation. With regards to the payloads, the main technical and scientific challenges are the limited availability of high-quality accelerometer data from Alpha and Bravo, the search for optimised (near-continuous) operations scenarios for the Thermal Ion Imagers and the search for the optimal understanding of the optical bench performance for magnetometry and attitude observations. Expert groups constantly work and meet to discuss the resolution of these issues, providing essential support for the verification and validation of all data products, as well as the enhancement of processing algorithms. Specific investigations also involve dedicated attitude manoeuvres and hardware setting modifications.

In the data quality and content area, the Swarm Data, Innovation and Science Cluster (DISC)

has initiated the consolidation of ideas for products evolution and new product procurements. The first call for ideas for new products and services has received an overwhelming response. All DISC activities are closely coordinated with downstream mission exploitation efforts, such as those performed under the Support To Science Element umbrella. As such, potential key research future activities have been identified in the field of upper atmosphere (ionosphere-thermosphere-magnetosphere coupling), climate related processes (magnetosphere-atmosphere coupling), deep-Earth dynamics processes.

The Swarm constellation could further strengthen its scientific impact through the integration of the Canadian Enhanced Polar Outflow Probe (e-POP) payload as a fourth measurement point. e-POP is a scientific payload for CASSIOPE (CASCade, Smallsat and IOnospheric Polar Explorer), a multi-purpose small satellite mission from the Canadian Space Agency. e-POP is a scientific payload consisting of eight high-resolution instruments probing the characteristics of near-Earth space. Given the significant overlap in mission scope and instrument capabilities with Swarm, the e-POP data would be extremely valuable for the Swarm community supporting scientists in their investigation of the Earth's ionosphere, thermosphere and magnetosphere. The addition of

e-POP as ESA Third Party Mission is not formulated as a basic data archiving and re-distribution service, but it is actually conceived with an integrated approach and mutual engagement to enhance the mission objectives. The two missions would work together starting from the coordinated operational planning up to the joint effort of innovating the scientific exploitation of the data to increase the number of related applications and their societal relevance.

With an astonishing number of publications covering a broad spectrum of scientific subjects from Earth's core evolution to small-scale high-energy and dynamic ionosphere events, the three-satellite constellation promises to further unveil new discoveries during its future years of mission

exploitation. The upcoming programmatic decision will focus on the Swarm mission extension and on the specific management of the constellation orbit evolution to optimise the scientific return of the mission.

The important 2017 Swarm-related meetings are the Fourth Swarm Science Meeting organised at the Park Lodge Hotel in Banff, Alberta, Canada from 20-24 March 2017 (<http://swarm2017.org/>) and the 7th Data Quality Workshop will be organised in Delft on 9-12 October 2017 hosted by the Delft University of Technology.

Giuseppe Ottavianelli, Rune Floberghagen (ESA)
Mioara Mandea (CNES)

4 Reports on Meetings: IAGA-Sponsored or of IAGA interest

4.1 Report on the 7th VLF/ELF Remote Sensing of Ionospheres and Magnetospheres Workshop 2016

Hermanus, South Africa, 19-24 September 2016

The 7th workshop of the URSI/IAGA Joint Working Group on ELF/VLF Remote Sensing of Ionospheres and Magnetospheres (VERSIM) took place in Hermanus, South Africa, over the period 19-24 September 2016. Due to its scientific synergy and large overlap in membership, the VERSIM workshop held a coordinated meeting together with the Radiation Belt workshop, and was renamed VERSIM-RB to reflect this joint theme. The workshop was organized by the South African National Space Agency (SANSA) under the direction of Prof. Michael Kosch and Ms. Karen Wurbach. More details can be found on the workshop website: <https://events.sansa.org.za/versim-information>. The scientific sponsorship and financial support for this workshop was provided by the Union Radio-Scientifique Internationale (URSI), the International Association for Geomagnetism and Aeronomy (IAGA), and the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP's) Variability of the Sun and its Terrestrial Impacts (VarSITI) program.



The scientific program committee for the workshop consisted of Prof. Jacob Bortnik (IAGA co-chair of VERSIM, University of California at Los Angeles, USA), Dr. Mark Clilverd (URSI co-chair of VERSIM, British Antarctic Survey, UK), Prof. Michael Kosch (meeting organizer, SANSA chief scientist, South Africa), Prof. Craig Rodger (University of Dunedin, New Zealand), and Dr. Geoff Reeves (Los Alamos National Laboratory, USA).

The workshop attracted 55 participants from 16 different countries, which is considered to be ex-

cellent attendance numbers especially given the fairly distant conference location in South Africa (e.g., compare to the 6th VERSIM workshop held in Dunedin, New Zealand in 2014 which had 35 participants from 14 different countries).

Due to the financial support received by VERSIM, we were able to provide financial support for the meeting for 11 individuals. This was prioritized on supporting participants who were either students/young scientists, or came from developing countries. In order to maximize the impact, sponsorship from different sources was pooled, and the recipients received support covering all expenses except for international flights to Cape Town.

There were a total of 69 abstracts received, 59 of which could be accommodated as oral presentations, and 10 of which presented as posters. More information on presenters and abstracts can be found on the abstract webpage: <https://events.sansa.org.za/abstracts>. The abstracts were organized into 6 days, the first 4 days of which were devoted to core VERSIM topics and the last 2 days transitioned into more of a radiation-belt focus. The VERSIM scientific program can be found here: <https://events.sansa.org.za/versim-programme>.

The VERSIM workshop continues to be the scientific highlight of the VERSIM group, and was well supported with many outstanding presentation and broad international participation. The scientific content was thematically divided into:

1. An introductory and historical talk (which was recorded and placed online for future integration into the VERSIM webpage: https://www.youtube.com/watch?v=27Xf8k7_jZQ).

There were many outstanding presentations given at the meeting that are too numerous to list in this brief report, but a few common themes emerged regarding the improved detection and characterizations of whistler waves for remote sensing the plasmasphere, detection of VLF transmitter waves for measuring and characterizing the lower ionospheric density profile, the importance of whistler-mode and EMIC waves in controlling the dynamics of the radiation belts, the significantly expanded and improved multi-platform observational network that is now available to the VERSIM community, including the Van Allen Probes, THEMIS, CLUSTER, MMS (spacecraft) as well as ground based lightning detection networks, WWLLN and GLD360.

During the VERSIM business meeting, there were two presentations given as bids to host the next VERSIM workshop in 2018. These were: 1. Andrei Demekhov, Russian location in either Apatity or Murmansk 2. Geoff Reeves, US location in either Arizona or New Mexico. There will be an online poll created over the next few weeks and the VERSIM community as a whole will vote on the next venue.

J. Bortnik
On behalf of the Scientific Committee

4.2 23rd EM Induction Workshop

Chiang Mai, Thailand, 14-20 August, 2016



The 23rd Electromagnetic Induction Workshop (EMIW) was for the first time held in Chiang Mai, Thailand, from 14 - 20 August 2016. The venue was located at the Empress Convention Center

of the Empress Hotel. Chiang Mai is the largest city in northern Thailand. It was the capital of the Lanna Kingdom back in 1296. It is therefore known for the rich and unique northern Thai

scenery, Lanna culture and Thai food. No doubt, it is one of the top destinations within Thailand for tourists from all over the world. Transportation to Chiang Mai is therefore easy, as there are many direct flights from both Bangkok and other Asian cities.

The workshop is held every two years in different countries under the auspices of the IUGG and IAGA Division VI - Electromagnetic Induction in the Earth and Planetary Bodies. Having the 23rd workshop means that we have so far enjoyed 46 years of knowledge sharing, exchanging and debating ideas, inspiring the young, admiring the old, and farewell to the legends. For the Chiang Mai workshop, we still keep the workshop atmosphere the same as in the previous 22 occasions. Besides maintaining the high standard of the workshop, we blend the atmosphere with Thai smiles, Thai hospitality, Lanna culture, and delicious Thai food. We also brought all participants outside to explore the unique natural environment, Lanna culture and food during a one-day excursion.

For the 23rd workshop, we had 288 participants from 39 countries joining the workshop. Among these were 176 delegates, 90 students, 7 retired scientists and 15 accompanying persons. In addition to 288 participants, 27 Thai colleagues from our own staff increased the total number of attendants to 315. There were a total of 351 abstracts submitted in which 49 abstracts were selected by the Workshop Program Committee for oral presentations. All posters were on display for the entire week of workshop allowing the delegates to not only have a chance to see the posters during the poster sessions, but also at their own convenient time. The abstracts and extended abstracts including the review manuscripts were made available to the participants of the workshop via the web site of the conference (www.emiw2016.org). In addition, session descriptions and reviewer bibliographies, program schedules including excursion details can be obtained from the Program Book available via our official website.

Similar to previous workshops, we had provided significant financial support for a number of participants who contributed to the workshop but had insufficient funds to cover their travel and participation costs. Unfortunately, not all applicants could be supported as resources were lim-

ited; decisions were made by the Financial Support Committee of IAGA Division VI. Priority was given to

- (i) applicants authoring a presentation (either oral or poster),
- (ii) students and postdocs/junior scientists since they typically have less access to other sources of funding, and
- (iii) in particular to applicants, who have not received funding for one of the previous (three) workshops.

Weerachai Siripunvaraporn
Chair of the Local Organizing Committee

4.3 MT3DINV3: Third Workshop on 3-D Magnetotelluric Inversion

Bari, Italy, 16-18 May 2016



Just as the prior two workshops, this third one has given the opportunity to bring together MT 3D inversion code writers and code users and assess how well the codes perform as well as how they are well/poorly understood from the users. All the attendees earned a place at the workshop by performing one or both of the following tasks: forward modeling a test model (DTM3), or inverting the secret model (DSM3). The workshop has been web-cast in order to give the opportunity to all the scientists (who did not complete the task or who were not able to attend the workshop) to follow the event. During the three days of workshop (16-18 May 2016) the focus was sequentially on the following topics:

1. 3D forward modeling
2. 3D inversion

3. Open questions about 3D forward and inversion approaches and their reliability.

The first two days have permitted to compare results coming from codes based on different approaches: integral equations, finite differences, finite elements methods. The comparison of the results has shown the criticisms of the responses when complex topography and bathymetry are to be accounted for together with complex resistivity distribution in depth. During the third day, it took place an open and intense discussion among the attendants aimed to delineate which are the best line for and useful development in the research of 3D electromagnetic forward and inversion modeling.

The workshop was preceded on 15th of May by a training day on ModEM, a 3D magnetotelluric inversion code made by Gary Egbert, Anna Kelbert and Naser Meqbel.

The number of participants: 29 come from: Australia, Canada, China, France, Germany, Iran, Ireland, Italy, Japan, Poland, Russia, Spain, Switzerland, United Kingdom, United States of America.

More information on <https://www.dias.ie/mt3div3/Home.html>, and a streaming web recorded during the workshop is now available at <https://www.youtube.com/user/unialdomoro/videos>

Agata Siniscalchi
Chair of the Local Organizing Committee

4.4 6th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System

Taipei, Taiwan. July 25 - 29, 2016

The 6th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System was held on the campus of Academia Sinica in Taipei, Taiwan from July 25 - 29, 2016. This is the second time this Workshop has been held in Asia, with the objective of encouraging the involvement of researchers and students in this region. Participation at the Workshop included colleagues from 16 institutions across 9 countries spanning Asia, Europe, North and South America. During five days of the workshop over 40

contributions were presented, among them 9 solicited. Abstracts and the Workshop program are available online at <http://www.ss.ncu.edu.tw/~vcais6/program.html>.



This traditional meeting brought together research experts from the lower, middle and upper neutral atmosphere and ionosphere communities in order to present their work and assess/debate ongoing issues relating to the theoretical, modelling and observational aspects of all kind of processes which transfer energy and momentum from the lower atmosphere to the upper atmosphere and ionosphere and vice versa.

The past two years have seen considerable progress in observing and quantifying variability throughout the atmosphere-ionosphere system driven by dynamical and chemical coupling, as well as identifying their respective driving mechanisms. To facilitate the community dialogue crucial to understanding how these phenomena contribute to the overall variation of the Earth's atmospheric system, the 6th Workshop on Vertical Coupling in the Atmosphere-Ionosphere System was held. This meeting provided an excellent opportunity for the research communities to interact in a supplementary manner in reviewing and debating the progress done to date in the field of the upper atmosphere-ionosphere and come up with suggestions and ideas for further research on the vertical coupling of the atmosphere-ionosphere system. Interaction between scientists from atmospheric, space and solar physics has been found to be very fruitful in terms of initiating further discussions of research and open questions.

Topics of interest included ionosphere and atmospheric variability induced by the propagation, breaking, and modulation of atmospheric tides and planetary waves, middle atmospheric ef-

fects of planetary waves, as well as their interannual variability, ionospheric variations due to solar eclipses, dust storms, and earthquakes, chemical and dynamical changes observed in airglow, as well as upper atmospheric changes caused by increasing carbon dioxide concentrations and tropospheric climatological effects such as ENSO. Participants agreed on the need for a detailed review of recent findings, particularly on variability driven by propagating planetary waves, and also initiated planning for a special edition of the *Journal of Atmospheric and Solar-Terrestrial Physics*, to be submitted in December 2016.

The Organizing Committee would like to acknowledge financial support from the International Association of Geomagnetism and Aeronomy (IAGA), SCOSTEP VarSITI and the Taiwan Ministry of Science and Technology (MOST). The grants were used to cover travel expenses of four young scientists and waiving fees 4 participants. Among four supported young scientists, there are two invited speakers.

Dr. Petra Koucká Knížová
Chair of the Scientific Committee
and
Loren Chang
Chair of the Local Organizing Committee

4.5 15th Castle Meetings Workshop

Dinant, Belgium, 21 - 27 August 2016



The biennial Castle meetings are an appreciated scientific event in the international scientific community of palaeo- rock and environmental magnetists. Existing already for 28 years, they are providing a fair budget platform fostering scientific exchange between researchers from different generations.

The 15th edition of the Castle meeting was held in the Castel de Pont-à-Lesse (Dinant, Belgium)

from the 21st to the 27th of August 2016. In total, 85 participants from 24 countries from four continents participated actively and gave 94 conference presentations (64 oral, 30 posters), with a remarkable number of 34 Master / PhD student contributions. The scientific programme was partitioned into plenary sessions consisting of 8 to 10 oral presentations, two poster flash presentation sessions, and sufficient time for poster viewing. A conference highlight were the four invited talks.

Trond H. Torsvik (University of Oslo, Norway) reviewed the Phanerozoic palaeomagnetism and Jean-Pierre Valet (Institut de Physique du Globe de Paris, France) sedimentary geomagnetic records. The look beyond is a key characteristic of an open-minded scientific community, notably in times when transdisciplinary research gains increasingly in importance. In order to cater for these developments, Silvio Dutz (Technische Universität Ilmenau, Germany) presented physical aspects of magnetic nanoparticles and their use for magnetic fluid hyperthermia - an experimental anticancer treatment. Furthermore, it was a particular honour to follow the presentation of André Berger (Université Catholique de Louvain, Belgium), underlining the importance of past climate records and climate sensitivity with respect to geographic and seasonal insulation changes for the establishment of future climate projections. Beside the scientific programme, two half-day excursions were organised: to Bruges and to the Brasserie du Bocq in Purnode. A choral concert in the Collegiate church of Dinant and a dinner boat trip on the last day completed the meeting.

The Castle meetings are aiming to involve more and more students, thus facilitating their integration into the international scientific community, and to encourage them in their scientific research. In order to underline this, a committee of five experienced scientists evaluated all student presentations - a rather difficult task given the generally high quality. As a result, five awards for outstanding student presentations were given to: Stanislava Akimova, (Moscow, Russia), Katarzyna Dudzisz (Warsaw, Poland), Frances Heinrich (Münster Germany), Pádraig Ó Conbhuí (Edinburgh, UK), Sébastien Wouters (Brussels, Belgium). Katarzyna Dudzisz from the Institute of Geophysics of the Polish Academy of Sciences was nominated for the IAGA Young Stu-

dent Award for her presentation entitled "Paleo and rock-magnetism of the Lower Triassic rocks from the Hornsund -Sørkapp area, Spitsbergen."

Another innovation that started in 2014, is the pre-meeting short course for students. This year's short-course focused besides magnetic susceptibility also on hysteresis and was organised in the RMI's Geophysical Centre in Dourbes. The support of AGICO s.r.o. (Brno, Czechia) and LOT-QuantumDesign GmbH (Darmstadt, Germany) is highly appreciated here. During 2¹/₂ days, 20 international students followed lessons about basic physical principles, theoretical aspects, measurement schemes, data processing, applications and micromagnetic modelling, prepared by Martin Chadima (AGICO, Czechia), Mark Dekkers (Utrecht University, The Netherlands), Ramon Egli (ZAMG, Austria), Karl Fabian (Geological Survey of Norway), František Hrouda (AGICO, Czechia), Eduard Petrovský (CAS, Czechia), Simo Spassov (RMI, Belgium) and Libor Vejmelek (AGICO, Czechia). The students were provided with the possibility to become familiar with sophisticated measurement instrumentation for magnetic property characterisation.

The 15th edition of the Castle meetings has been successful in being a pole attracting, motivating and supporting young generation scientists, fostering scientific exchange and bringing together an open-minded scientific community. The success of this meeting relied upon the numerous motivated hands that helped before, during and after the meeting, namely my colleagues Muriel Borremans, François Brouyaux, Cindy Goeseels (RMI in Brussels), Marie Verbeek (Archaeological Service of the Walloon region, SPW Namur), my team from the Laboratory for Environmental Magnetism: Souad Ech-chakrouni, Jozef Hus, Frédéric Mathot, Ludovic Teruel and François-Michel Wattecamps, the personnel of the Geophysical Centre in Dourbes: Marie-Claire Bodart, Stefan Bracke, Magda Francotte, François Humbled, Marylène Preumont, as well as the head of the department Jean Rassin.

The prosperity of the 15th Castle Meeting owes also a lot to the generous support of the Belgian Science Policy (BELSPO), the International Association of Geomagnetism and Aeronomy (IAGA), and the following partners: AGICO s.r.o. (Brno, Czechia), Magnetic Measurements Ltd.

(Aughton, UK) and LOT-QuantumDesign GmbH (Darmstadt, Germany). We wish to express our deepest gratitude to all of them. IAGA financial contribution was provided to participants from China, Greece, Mexico, Russia and Ukraine.

The next, 16th edition of the Castle Meetings will be held in Poland in 2018. Out of two bids - Croatia and Poland - presented at the meeting, the proposition from Poland got the higher number of votes. We are looking forward to the next fruitful and successful meeting in two years.

Simo Spassov
Chair of the Local Organizing Committee

4.6 XVIIth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing

Dourbes, Belgium, 4-10 September, 2016



The XVIIth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing was held in Dourbes, Belgium from September 4 to 10, 2016 in the Geomagnetic Observatory DOU pertaining to the Institut Royal Météorologique de Belgique (<http://www.meteo.be/iaga2016>).

The workshop comprised two main activities: observatory instruments intercomparison/calibration and conference talks. The two ran in parallel during the five days. We counted no less than 87 participants from 37 countries of which 21 were out of Europe. We had participants from 8 countries in the Southern Hemisphere. A total of 50 instruments were brought in for intercomparison. New in this workshop was a streamlined approach with concurrent measurement and instruments sessions giving more time for talks and measurements while limiting the workshop duration to 1 week. We had a total of 72 presentations including 1 Invited Talk.

Additionally to the talks, there was a data processing training session, an EPOS splinter session and an INTERMAGNET round table. The topics of the conference were: Observatory Instruments and Techniques (19), Observatory Data Acquisition and Processing (13), Upgraded/New Observatories (17), Magnetic Repeat Stations (4) and Other Applications for Observatories (16).

The Local Organizing committee was able to support scientists and observers for participating; in total, 23 fee waivers, 19 airplane fares and 19 hotel rooms were offered to carefully selected participants.

The results of the instrumentation session and peer-reviewed papers corresponding to the talks will be published in an "inter-journal" issue in both "Geoscientific Instrument, method and data System" (GI) and in "Annales Geophysicae" (ANGEO) which are both EGU/Copernicus journals.

Jean Rasson
Chair of the Organizing Committee

4.7 IAGA-IV Symposium "Influence of short and long term solar variability on climate"

Hurghada, Egypt, 20 -24 March, 2016



The Symposium held for the 4th time, with about 70 attendances from nine countries: Cameroon, Egypt, UK, France, Germany, Mali, Morocco, Russia, Saudi Arabia.

Via the Symposium website: <http://iaga.cu.edu.eg>, we received 49 abstracts. The Scientific Organizing Committee selected 9 papers as review or invited speakers' one. In addition 15 papers were accepted as oral contributions and poster contributions included 25 papers.

The scientific program of the Symposium has been divided into 6 scientific sessions distributed in 4 days as follows:

- Solar and Space missions for Space Weather and solar variability observations,
- Solar activity/variability effects on the lower, middle and upper atmosphere,
- Modeling climate consequences of solar activity influence and suggested mechanisms,
- Modeling and predicting large flares, super flares, CMEs and other extreme events,
- Solar energetic particles and Solar wind influence on the Earth's inner magnetosphere and atmosphere and
- Societal impact of solar variability, Education.

The articles issued 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. Articles are expected in within three months after the Symposium, July 30, 2016 deadline.

Ahmed A. Hady
Co-Chair of the Organizing Committee

4.8 International Conference "Data Intensive System Analysis for Geohazard Studies"

Sochi, Russia, 18-21 July, 2016

The international conference "Data Intensive System Analysis for Geohazard Studies", that was held on 18-21 July 2016 in Rosa Khutor village, Adler district of the city of Sochi, has been completed.



The Conference brought together research scientists, observers, computer experts, practitioners and technical end-users concerned with monitoring of the Earth's environment, detection of hazards, data analysis and modeling, vulnerability and risk assessment. More than 140 scientists and specialists from 14 countries (Russia, USA, UK, Finland, Switzerland, France, Germany, Austria, Netherlands, Italy, South Africa, Iran, India, Uzbekistan) have participated in the Conference. The key goal was to unite the leaders and decision makers of the International organizations that are specialized in projects related to Systems Analysis, Data Mining and Data Management. Among the participants of the conference was Director General of the International Institute for Applied Systems Analysis Prof. Pavel Kabat, Secretary General of the International Association of Geomagnetism and Aeronomy of the International Union of Geodesy and Geophysics Prof. Mioara Manda, President of the International Council for Science: Committee on Data for Science and Technology (CODATA) Prof. Geoffrey Boulton, Director of Department of Homeland Security Center of Excellence CCICADA: Command, Control and Interoperability Center for Advanced Data Analysis Prof. Fred S. Roberts and others.

The Conference in Sochi was devoted to implementation of Systems Analysis embracing a sophisticated data analysis and holistic Earth science approach in order to get comprehensive information on the phenomena of different degrees of hazard and on the multi-scale extremes. The topics, discussed during the Conference, included to observations, detection of and modeling geo-

physical extremes; development, implementation and maintenance of methods and instruments for monitoring; evolution of natural systems towards extreme conditions; assessment of global- and local-scale hazardous phenomena; challenges in data processing and analysis using pattern recognition, statistical and other methods relevant to large data processing; applications of geodatabases and GIS.

The panel discussion "Great Debate" titled "What scientific and technological data and their Systems Analysis will be in the 21st century?" took place on 20 July 2016. During the meeting prominent leaders of the international scientific organizations and distinguished scientists discussed the most significant trends of the 21st century in Systems Analysis development, Data Science, geobservations and other important disciplines. Another two scientific events engaging international experts took place on the last day of the Conference: Russian Data Citation Workshop and the workshop, titled "Interdisciplinary scientific collaboration towards sustainable Arctic". They provided the overview of modern trend and the discussion regarding future challenges in the appropriate areas.

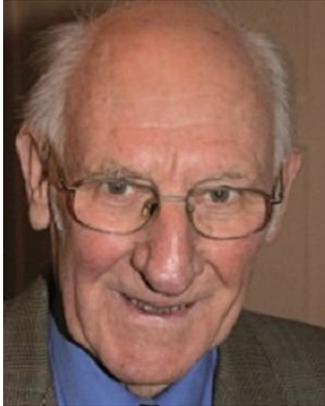
The main events of the Conference were intensely covered by Russian scientific media and news agencies. Electronic publications about the Conference are available at the sites of "Scientific Russia", Russian Science Foundation (RSF), Russian Academy of Sciences, Federal Agency for Scientific Organizations, Russian Geographical Society, "Moskovskij Komsomolets", "Vesti Sochi", Russia-Kuban TV-channel, "Argumenty i Fakty" and others. Separately, it should be noted that correspondents from the Russian News Agency TASS were present at the conference and prepared two publications, based on the interviews with the Conference participants. 28 publications about the Conference were prepared in total. The past Conference resulted in the establishment of new international contacts and collaboration priorities including the projects devoted to the Arctic region.

Alexey Gvishiani
Chair of the Organizing Committee

5 In Memorium

Raymond Hide CBE FRS (1929 - 2016)

We are sad to record the passing of one of the giants of our field. Raymond Hide passed away on the 5th September 2016 at age 87. Raymond, known to his friends as Spike, was a geophysicist of the highest calibre, beginning his scientific career in the 1950s working with Sir Patrick Blackett and Keith Runcorn at the University of Manchester. As an undergraduate he worked on the coal mine experiments designed to confirm or refute the notion that the magnetic field was intrinsically linked to the Earth's rotation. At Cambridge he designed and studied the rotating annulus experiment that caught the imagination of geophysicists and meteorologists alike. This experiment studied the influence of convection in the presence of rotation and demonstrated the likelihood of wave motion in the core.



Amongst the numerous contributions made by Raymond over the course of his career, we can highlight his theoretical work on MHD waves in the core, his interest in core-mantle interactions and studies of the length-of-day on both short and long timescales, as well as planetary atmospheres and nonlinear dynamics. Sometimes Raymond's creative ideas courted controversy, and he was often willing to contribute to spirited arguments. Amongst the posts held by Raymond were Research Associate in Astrophysics, University of Chicago; Senior Research Fellow, Atomic Energy Research Establishment, Harwell; Lecturer in Physics, King's College, University of Durham; Professor of Geophysics and Physics, MIT; Founder and Director of Geophysical Fluid Dynamics Laboratory at the Met Office, Bracknell, and Professor of Physics, University of Oxford.

Raymond was made a Fellow of the American Geophysical Union (AGU) in 1967. He was awarded AGU's highest honour, the Bowie medal, for unselfish cooperation in research, in 1997.

Raymond was the recipient of many other accolades, for example being a member of the Pontifical Academy until his death. He held the unique distinction of being the only person to have held both the presidencies of the Royal Meteorological Society and the Royal Astronomical Society. From the former he was awarded the Symons Gold Medal in 2002 and from the latter the Gold Medal in 1989. He was made a Fellow of the Royal Society in 1971, and was awarded the Hughes Medal of the Royal Society in 1998.

He worked tirelessly for the promotion of geophysics and meteorology until his retirement at the turn of the millennium. He was especially supportive of the careers of young scientists. His friends will miss his infectious enthusiasm for understanding the dynamics of planets and the deep Earth.

Andrew Jackson
Institut für Geophysik, ETH Zürich, Switzerland

Helmut Rosenbauer (1936 - 2016)



Dr. Helmut Rosenbauer, former director of the Max Planck Institute for Aeronomy (today Max Planck Institute for Solar System Research) died on May 5th, 2016 at the age of 79 after a long illness. He was a Scientific Member of the Max Planck Society from 1977 until 2004 and played a key role in shaping and setting up several space missions investigating the Earth's magnetosphere, solar wind, planets, and comets. One of his most important achievements was his participation in the design of the comet lander Philae which touched down on the surface of comet 67P / Churyumov-Gerasimenko two years ago as part of ESA's Rosetta mission.

Helmut Rosenbauer was born in 1936 in Nürnberg, Germany. He began his scientific career at the Technical University of Munich, from where he received a Doctorate of Engineering

for his research in plasma physics. As a scientist at the Max Planck Institute for Extraterrestrial Physics in Garching, Germany he then contributed to important space missions such as HEOS A-2, Helios 1 and 2 by developing instruments to study solar wind, low energy particles, and electrons in the Earth's magnetosphere.

In 1977 the Max Planck Society appointed him Scientific Member and director at the Max Planck Institute for Aeronomy (MPAe) in Katlenburg-Lindau, Germany. He founded the institute's department for Experimental Planetary Research which he led for 27 years. In this time, he molded the MPAe into a significant and internationally recognized partner of international space missions. Under his lead the institute provided major contributions to the space missions Ulysses, Giotto, Phobos, and Mars 96 among others. His last big success was ESA's mission Rosetta to comet 67P / Churyumov-Gerasimenko (even though it reached its destination many years after his retirement) and he can well be regarded as one of the "fathers" of Rosetta's comet lander Philae, which landed on the comet in 2014 and became the first spaceship to ever touch-down on a comet. He contributed significantly to the overall design of the lander, was responsible for the entire landing gear and release mechanism, and devised one of Philae's main scientific instruments. Without his commitment and technical ingenuity Philae would never have flown.

Helmut Rosebauer was not only an outstanding scientist, but remained an innovative engineer throughout his career, who, for example, did not hesitate to take the soldering iron himself. The success of the projects led by Helmut Rosenbauer is largely thanks to his perseverance, his inexhaustible wealth of ideas and his tireless commitment. He boldly tackled the "impossible". His colleagues held him in high regard and affectionately called him "chief". They not only appreciated his ingenious ideas, but also his thoughtful and visionary leadership.

With Helmut Rosenbauer we have lost an excellent and imaginative researcher, a judicious institute director, an encouraging boss, and a good friend.

Sami K. Solanki
Max-Planck Institute for Solar System Research, Germany

Maha Ashour-Abdalla (1944 - 2016)

Maha Ashour-Abdalla, a professor of physics with expertise in space plasma physics and a passion for teaching, died May 1. She was 72.

Maha Ashour-Abdalla was born and raised in Alexandria, Egypt. Maha excelled in mathematics and finished high school very young:



She was in college at age 15. After completing her B.Sc. at Alexandria University in 1964, she pursued graduate studies at Imperial College in London where she was awarded her Ph.D. in 1971. She then became a research scientist at the Centre National d' Etudes des Telecommunications in France, before moving to Los Angeles where she was a geophysics researcher in the UCLA Institute of Geophysics and Planetary Physics from 1976-1985. Maha was appointed as a Professor in the UCLA Department of Physics and Astronomy in 1985. She was elected a Fellow of both the American Physical Society (1986) and the American Geophysical Union (1993).

In the early 1980's Maha founded the UCLA Space Plasma Simulation Group (SPSG), which pioneered using plasma simulations for magnetospheric physics in close coordination with spacecraft data. Maha's boundless enthusiasm for space science research resulted in her establishing collaborations with scientists from around the world. In 1982 she initiated the International School/Symposium for Space Simulations (ISSS-1) along with colleagues from Japan and France. She helped organize the most recent ISSS-12 held in Prague in 2015.

Teaching at UCLA was one of Maha's passions and her undergraduate courses were very popular. Maha's excellence in teaching over the years resulted in her receiving the Outstanding Teaching Award 11 times from the Department of Physics and Astronomy. The ultimate appreciation of her teaching abilities was shown in January 2000 when she was named one of the Top 20 UCLA Professors of the 20th Century by UCLA Today.

During her tenure at UCLA, Maha supervised eleven Ph.D. graduates as well as many postdoctoral researchers.

Maha's love for teaching and use of computers intersected with her development of educational programs for students (K-12 and college) that utilized innovative digital technologies. In 1999 she founded and became the director of the UCLA Center for Digital Innovation (CDI) and oversaw the development of numerous educational software products for science, math and computer literacy. An early groundbreaking effort of CDI was the launching of the Transpacific Interactive Distance Education (TIDE) program, which allowed students at UCLA and at Kyoto University in Japan to participate in face-to-face collaborative lectures.

Over the years, Maha was principal and co-investigator on numerous grants from NASA and NSF. Most recently, she was the UCLA principal investigator of an Interdisciplinary Scientist grant for NASA's Magnetospheric Multiscale (MMS) mission, a four spacecraft mission launched in 2015 to study magnetic reconnection, one of the most critical problems in space physics. During her extensive career she received many awards of recognition and served on numerous national and international advisory panels.

Maha Ashour-Abdalla was a tireless worker and prolific researcher. Until the very end she was actively working on research and teaching. Maha was charismatic, engaging, extremely loyal, and those who met her quickly came to appreciate the force of her personality. Maha was truly a one of a kind individual who left an indelible impression on everyone she met. She will be greatly missed. She is survived by her husband Dr. Mohamed Abdalla and her daughter Kenz Abdalla.

A scholarship in Maha's name, the Maha Ashour-Abdalla Scholarship in Space Physics has been set up to encourage and support women who are starting graduate studies and wish to focus on research in the area of space physics. Details are available at <https://giving.agu.org/campaign/maha-ashour-abdalla-scholarship-space-physics-fund/>

Mostafa El Alaoui
Institute of Geophysics and Planetary Physics,
University of California, Los Angeles, USA

Theodore Wesley Speiser (1934 - 2016)



Ted Speiser passed peacefully on April 8, 2016 after complications stemming from a stroke. He was 81.

Ted was Professor Emeritus at CU Boulder in Astrophysical and Planetary Sciences and consulted at the National Oceanic and Atmospheric Administration's Space Environment Laboratory in Boulder.

As a Colorado native, Ted's long and productive career began with the study of physics at Colorado State University, progressed to a master's at California Institute of Technology (1959), and then a PhD at Penn State University where he was a student of James W. Dungey of Imperial College, London, who was a consultant at Penn State's Ionosphere Research Laboratory. From this relationship Ted learned of the importance of magnetic reconnection as an important factor in magnetospheric dynamics and used and developed the theory to help understand particle transport through the magnetosphere.

Ted then went to NASA Goddard Space Flight Center as a post-doctoral researcher and used his considerable theoretical expertise in analyzing satellite observations of magnetospheric particles. He subsequently spent a year with Dungey at Imperial College, London, before returning to and settling in Colorado as a professor in the then-Department of Astrogeophysics. Ted also served as a 2nd Lt. in the US Army, and was also a Fulbright Scholar and Humboldt award recipient in Germany, where he later spent a sabbatical working with Karl Schindler at Ruhr-Universität Bochum, Germany.

Ted's research interests revolved around the motions of charged particles in plasmas undergoing magnetic reconnection, the process whereby magnetic fields from diverse sources connect with and disconnect from each other, transferring, storing, and releasing energy and plasmas, explosively at times, for example in solar flares and auroral substorms. CU graduate students fortunate enough

to come under Ted's influence enjoyed his full semester course on that topic, one of the first such courses taught at any American university.

Ted is perhaps best known for describing what are universally known as the "Speiser orbits" of charged particles in reconnecting magnetic field current sheets. After over 50 years, these remain a key element of heliophysics and our knowledge about reconnection, which was identified by Dungey as the most fundamental process controlling interactions between the Sun and magnetized planets.

In the 1960's when Ted first investigated reconnection, it was still a controversial concept that at times generated emotional arguments among advocates and skeptics. The lack of collisional dissipation in space plasmas became a sticking point, which was addressed by Ted in a paper entitled "Conductivity without collisions or noise". True to his particle motion studies, he pointed out that electric fields may exist in space without benefit of classically resistive media, a point that was also relevant to the acceleration of particles in aurora. Ted was clearly an advocate of the importance of reconnection, a position which was finally vindicated by a series of observations culminating with those from the International Sun Earth Explorer in the late 1970's.

As part of his consulting work at NOAA and SEL, Ted was also active in numerous related areas of space plasma physics, from the formation of auroras on the dayside of Earth, to the structure and motions of the magnetotail, and its current sheets, to the explosive phenomena of auroral substorms, to the energetic particles whose pressure inflates the inner magnetosphere of Earth. Ted's unique approach of building particle distribution functions and mapping them into and through the magnetosphere, all the while comparing them to observations, lead to important insights to particle transport into and throughout this complex regime. Some of us, including Thomas Detman, Jo Ann Joselyn, and Zdenka Smith at NOAA / SEL remember Ted as a mentor and supportive friend, prone to deep physical and philosophical discussions over coffee and doughnuts, in a more relaxed environment.

Ted would have been thrilled by observations from the recently launched NASA Magnetospheric Multiscale Mission (MMS), which is ded-

icated to investigating reconnection. MMS recently has resolved for the first time the existence of "crescent" shaped distributions of meandering electrons, the result of electron "Speiser orbits". He delighted in the pursuit of new scientific discoveries, from solar physics to experimental treatments for his Parkinson's illness. Ted also had an insatiable love for travel, hiking, cross-country skiing, tennis, photography, music, football, and practical jokes.

Born November 23, 1934 in Del Norte, CO, Ted attended high school in Fort Collins where he met and married Patricia McCrummen. Together they raised three daughters. Ted greatly enjoyed his two grand-daughters. Ted was a gifted, generous, supportive and finally courageous colleague and will be missed dearly by all those who have known and worked with him.

Thomas E Moore
NASA/Goddard Space Flight Center, USA,
David S. Evans, Donald Fairfield, Terry G. Forbes,
Donald J. Williams

Vladimir "Volodya" Nikolaevich Shuman (1942 - 2016)



Vladimir "Volodya" Nikolaevich Shuman was born on February 18, 1942 in a small village, Zadereevka, of Northern Ukraine in a family of teachers. During 1960-1964 he studied geophysics in Kiev State University and in 1965-1967 worked

out a debt for his study in Belorussian geophysical expedition. In 1967 he entered the Institute of Geophysics of Ukrainian National Academy of Sciences, primarily as a PhD student, then scientist, senior scientist, then up to death as the head of the Department of mathematical geophysics. His PhD thesis (1972) and works of following two decades were devoted to solution of direct and inverse problems of electromagnetic sounding and its application to study of electrical conductivity anomalies in the Earth's crust. This was followed by the development of kinematic approach for quasi-stationary EM fields of natural

and man-made sources, bimodal structure of the EM response functions and principles of optimal selection of electromagnetic sounding systems, and generation of toroidal magnetic field in the Earth's atmosphere. He used precise impedance boundary conditions and generalized relations for impedances and the most important work in this field - introduction of mathematically rigorous local scalar impedances instead of commonly used truncated tensor of impedance which do not have a precise mathematical basis.

Volodya had acquired a deep knowledge in physics and mathematics and applied them to obtain solution of geophysical problems and in the last two decades, in explanation of phenomena and experiments in nature, which were not explainable in the framework of traditional physics. Even in the last year of his life, Volodya published two articles: "Spontaneous emission activity of lithosphere and seismoelectromagnetic phenomena" [Geophys. J., 2016, V.38, N2, 79-87] and "Fractional dynamics and emissive activity of geosystems" [Geophys. J., 2016, V.38, N3, 72-83], which concentrated on a diffusion-relaxation component of lithospheric seismoelectromagnetic noise interpreted in terms of nonlinear dynamics of non-equilibrium geomedium, This was a result of interaction and concordance between mechanisms of its self-organization that determine the trends of evolutionary processes development and effects of dynamic relaxation, which reflect the role of fluctuations and dissipative factors.

Volodya was very decent and modest scientist and colleague. Having deep insight in any problem he generously gifted ideas to colleagues without his co-authorship. Volodya did not repeat publication of his new results in many articles. He thoroughly studied a problem, sent the results to a Journal and proceeded to the development of a new idea. Some of his ideas and results are too new to be accepted and used at the present time. They will have to wait for an appropriate time for their acceptance.

Prof. Dr. V. Shuman published approximately 200 articles, 1 manual and monograph authored by V. N. Shuman, and M. G. Savin: "Mathematical Models in Geoelectrics" published by Kiev: Naukova Dumka, in 2011. He was the leading editor of Geophysical Journal and member of editorial board of the journals Geodynamics and Geoin-

formatics, and member of four scientific boards. In 2001 he got Academia Award, and in 2014, State Award for Scientific Achievements. For 20 years, Volodya taught Mathematical physics and Theory of geoelectromagnetic fields in Kiev State University and educated new generations of geophysicists.

Volodya was a man devoted to his family: wife Lyuba, sons Oleg and Dima and grandchildren. He had many friends. They loved him for his kindness, for his sense of humor, his lively conversations and profound insight in theoretical geophysical problems. He was working until the end and died on November 5, 2016 when he was 74 years old. Volodya left deep imprints in our scientific landscape. We greatly admire his life and will always cherish our memory of him.

Igor I. Rokityansky
Institute of Geophysics of Ukrainian Academy of Sciences,
Kiev, Ukraine

Christian Sucksdorff (1928 - 2016)



Professor Christian ("Chris") Sucksdorff, the former head of the Geophysics Department of the Finnish Meteorological Institute (FMI), died on 23rd of October 2016 at the age of 88 years.

He was born in Sodankylä, Lapland, where his father

Eyvind Sucksdorff (1899-1955) was the director of the Sodankylä Geophysical Observatory (1927-1945). In the late 1940s, Eyvind Sucksdorff restarted regional geomagnetic mapping of Finland as a project of the FMI. He educated his son as an assistant for geomagnetic measurements and so started his more than 40 years long career at the FMI. Chris studied physics at the Helsinki University and took his M.Sc. degree in 1956, Ph.D. dissertation in 1968. Eyvind Sucksdorff died suddenly in 1955, and Chris Sucksdorff took over all geomagnetic works after his father, at the FMI, including development of the Nurmijärvi Geophysical Observatory.

During the International Geophysical Year (IGY) 1957-1958 activities in all branches of geophysics in Finland expanded substantially. Chris's contribution to the IGY was that a network of modern auroral all-sky cameras was set up in North Finland. This achievement was the start of the space weather monitoring at the FMI continuing up to present days.

During the leadership of Chris Sucksdorff the number of personnel at the Geomagnetism unit increased in about 30 years from a couple of scientists to several tens of them. When Chris retired in 1991 he left behind a Geophysics Department where scientific research and projects were focused on several fields from geomagnetism to space physics.

Sucksdorff was an active member of the IAGA since early 1960s. He was the leader of several Working Groups. He was the co-author of the IAGA manual "Guide for Magnetic measurements and Observatory Practice" published in 1996. IAGA nominated Chris Sucksdorff as an Honorary Member in 1993. He was member of several Finnish scientific academies and societies.

We say goodbye to our colleague Chris Sucksdorff. He will always have a special place in our minds.

Heikki Nevanlinna
Finnish Meteorological Institute, Helsinki, Finland

Roland Schlich (1932 - 2016)



Roland Schlich was born in Metz in 1932. After graduating from the Institute of Physics of the Globe of Strasbourg and graduating from a postgraduate engineer in 1956, he spent a short time in the petroleum industry. A Centre National de la Recherche Scientifique (CNRS) announcement seeking volunteers to carry out work in Antarctica was the starting point of his scientific career. On the occasion of the International Geophysical Year (1957-1958), he was in charge

of the program of magnetic observations at the Charcot station located inside the Antarctic continent. He wintered at the Charcot Station with meteorologist Jacques Dubois and glaciologist Claude Lorius in a small aluminium hut buried under the ice, in the vicinity of the south magnetic pole. This exceptional experience was told in a book (365 days under the ice of the Antarctic, Glénat, 2008) and a film (Buried in the heart of Antarctica, DVD MK2, 2008).

In 1968, Roland Schlich moved into the fields of marine geology and geophysics and launched a long-term research programme in the Southern Indian Ocean. He received a Doctor of Science from the Université Pierre et Marie Curie (Paris VI) in 1974. He was the head of the CNRS Marine Geophysical Laboratory (1972-1980) and served as deputy director for the Institut de Physique du Globe de Paris (1976-1979). He moved to the University of Strasbourg and served as director for the Ecole et Observatoire de Physique du Globe de Strasbourg (1980-1996).

Between 1960 and 1998, Roland Schlich published nearly 200 scientific articles and numerous reports. He presented nearly 120 contributions, many of them as invited speakers, in national and international congresses. In addition, he conducted or co-directed 21 doctoral theses.

Roland Schlich was Treasurer (1982-1996) and Executive Secretary (1996-2002) of the European Union of Geosciences (EUG). He then became treasurer of the European Geosciences Union EGU (2002-2014). He has been an active member of the Scientific Committee on Antarctic Research SCAR (Chairman of the Finance Committee 1990-1998, then Vice-President 1998-2004), French National Committee for Geodesy and Geophysics, CNFGG (Treasurer since 1988), French for Arctic and Antarctic Research CNFRA (Chairman).

He was awarded several distinctions: Chevalier of the Order of the Black Star (1958), Chevalier (1968) and Officer (1994) of the National Order of Merit (1985), Tchihatchef Prize awarded by the French Academy of Sciences Paris (1975), Prix Barrabé awarded by the Geological Society of France (1976), Léon Lutaud Prize of the Paris Academy of Sciences (1996), Prince of Asturias Award (2002).

Roland's legacy is huge, and he will be missed by

many.

More details are available at <http://www.egu.eu/people/roland-schlich/>

Mioara Mandea
(IAGA Secretary-General)

Asa Grigor'evna D'yakonova (1936 - 2016)

On the 7th of October 2016, Asa G. Dyakonova passed away in her 81st year after a long illness. She was a well-known geophysicist, doctor of geological-mineralogical sciences, and a leading specialist in electromagnetic methods.



Asa G. was born on 7th of July 1936 in the village Elovka of Sverdlovsk region. After graduating from the Sverdlovsk Mining Institute in 1959 she was admitted to the Institute of Geophysics of the Ural Filial of the Academy of sciences USSR.

In 1971 she defended her thesis "Application of magneto telluric and magnetovariational methods for studying the structure of the crust and upper mantle of the Middle Urals," and in 1989 she defended her doctoral thesis "Geoelectrical structure of the Earth's crust and upper mantle in the Urals region." All her scientific activities had been focused on solving the fundamental problem of relationships of tectonic structure of the lithosphere folded belts with the peculiarities of the distribution of the electrical conductivity of the matter at various depths. The results of A. Dyakonova are used in constructing the geodynamic model that allows explanation of the processes of Ural's forming as a large linear system of planetary character. She had written more than 150 papers and 4 monographs.

Asa G. was a purposeful patient scientist, enthusiastic and caring leader, with deep honesty and was a very kind generous woman. All who knew Asa, loved and respected her and will long remember her bright image.

Colleagues of the Institute of Geophysics, Ural Branch of the Russian Academy of Sciences

6 General information about IAGA

6.1 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 re-

sults 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.

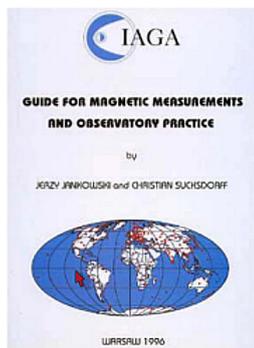
IAGA has published four practical guides to observation. These may be ordered from the Secretary-

General and they are also available at the IAGA web site.

IAGA Guide for Magnetic Measurements and Observatory Practice

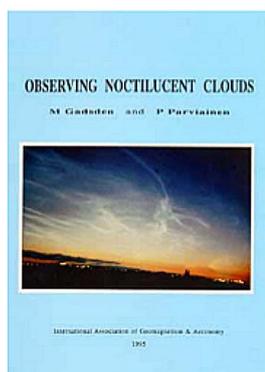
by J. Jankowski and C. Sucksdorff, 1996, 232 pages, ISBN: 0-9650686-2-5; Price: USD 50.

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.)

6.2 IAGA website

Information on IAGA can be found at: <http://www.iaga-aiga.org>

6.3 IAGA contact

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

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Imprint

Executive Editor: M. Manda (CNES)

Layout by L^AT_EX & A. Jordan (GFZ German Research Centre for Geosciences)