



IAGA
News

December 1997

No. 37

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NEW IAGA World Wide Web address
<http://www.ngdc.noaa.gov/IAGA/>

Foreword

This issue of IAGA News contains the Transactions of the 8th IAGA Scientific Assembly in Uppsala, information about the upcoming IUGG General Assembly, and much more news of interest to the IAGA Community. We also proudly announce a much-improved IAGA Home Page, thanks to the efforts of Cheryl Williams and Susan McLean of the NOAA National Geophysical Data Center. This page contains the names and addresses of all of the Commission, Division and Working Group Leaders, and points to related Web sites. Our Web site is being updated and improved constantly, and we welcome your suggestions. The new URL is <http://www.ngdc.noaa.gov/IAGA/>

IUGG Assembly, July 19-30, 1999

The first full meeting of the Scientific Organizing Committee was held in Birmingham, England, in September. The preliminary IAGA program is given after page 24. The IUGG Assembly Circular, *which you must request to receive*, will be ready by May, 1998.

Voluntary Contributions

In IAGA News No. 36, a request was made for financial contributions to IAGA. Several persons did respond to this request and we gratefully acknowledge these benefactors of the Association on Page 23. Donations received before August were used to augment the budget for travel assistance to Uppsala. Please seriously consider this opportunity to support IAGA scientists.

ICSU Grant

Dr. Georges Balmino, Secretary-General of IUGG, has just informed me that IAGA's 1998 grant proposal to the International Council of Scientific Unions (ICSU) was successful. We were awarded \$11,000 to support INTERMAGNET activities. This year ICSU supported the attendance of young scientists at the Uppsala Assembly. Also this year, IUGG supported the Workshop, *Solar Activity Forcing of the Middle Atmosphere*, in Prague, Czech Republic. A summary of that Workshop appears on page 37.

Deadlines

The next issue of *IAGA News* will be distributed in September, 1998. Please submit articles and notices by the end of July, 1998. Information about address additions, changes, and deletions is welcome anytime.

Sincerely, Jo Ann Joselyn, IAGA Secretary-General

Transactions of the 8th Scientific Assembly in Uppsala, Sweden, August 4-15, 1997

The Transactions include Remarks by IAGA President, Masaru Kono at the Opening Ceremony, and the draft minutes of the Conference of Delegates, including the Resolutions of the Assembly. The Scientific Program was published in IAGA News No. 35 (July 1996). We congratulate Rolf Boström and the Swedish Local Organizing Committee for their extraordinary efforts to produce an outstanding Assembly.

Remarks of the IAGA President, Dr. M Kono, at the Opening Ceremony of the 8th IAGA Scientific Assembly, August 4, 1997 Uppsala, Sweden

Distinguished guests, National Delegates of IAGA, Ladies and Gentlemen,

On behalf of the International Association of Geomagnetism and Aeronomy, I would like to welcome you to the 8th Scientific Assembly of IAGA, held in conjunction with the meetings of SCOSTEP and ICMA. We are very lucky to meet in this beautiful city of Uppsala, in the country of Hannes Alfvén, who is one of the founders of plasma physics and space sciences. IAGA will hold a commemorative lecture about Alfvén's contribution to geophysics on August 15th. The lecture will be delivered by Professor Falthammar, who was long time colleague of Hannes Alfvén.

Regarding the scientific achievements of IAGA in the recent years, there have been tremendous amounts of new findings and discoveries in many fields. I don't have time to go into details, but I might just mention the success of the first truly self-consistent dynamo models, and observation of reconnection and other interesting phenomena by Geotail and other satellites. The understanding of those complex phenomena led to the exciting new possibility of predicting space weather.

After talking about satellites, we cannot avoid considering the other source of our primary data: the geomagnetic observatories worldwide. Unfortunately, the situation here is far from ideal. Many observatories, not only in developing countries, but also in developed countries face cuts in budget and personnel, deterioration

of equipment, and even the threat of shutdown. The situation is quite serious because once the flow of data is stopped, it is lost forever. We lose the baseline for calibration, trained people to reduce the data, and information basic to secular variation studies.

For the health of our sciences, we should put more energy into obtaining good quality data. In the case of satellites, this objective is achieved by the effort of several dedicated groups in developed countries. In the case of geomagnetic observatories, the problem is much harder to solve because many countries, developing and developed, are involved. This is where IAGA comes into the picture. IAGA is truly international scientific community that knows the importance of the observatories as the source of primary data. And so we should spend more energy, time and effort to preserve or upgrade the world wide observatory system.

Before concluding my speech, I have a message from Peter Wyllie, the President of IUGG. Peter wishes to say that IUGG welcomes all of you to participate in the next IUGG meeting to be held in Birmingham, England, in 1999.

Lastly, I wish to thank the local organizers headed by Rolf Bostrom for their dedication for organization and for the excellent arrangements for the meeting. Now, let us enjoy these two weeks with exciting symposia and workshops, the beautiful city and the university of Uppsala, and meetings with old acquaintances and new friends.

Thank you very much.

Masaru Kono; 4 August, 1997

8th IAGA Scientific Assembly Conference of Delegates
Draft MINUTES
7 PM Thursday 14 August
Uppsala University, HSC Building; Lecture Hall 3
Uppsala, Sweden

The Secretary General read the list of 29 accredited delegates attending the Assembly; 23 delegates answered roll and two delegates arrived shortly thereafter for a total of 25 delegates present (see Attachment A). The Secretary General announced that the requirements was met (at least half of the registered delegates were present) and the Conference of Delegates could proceed.

I. Approval of the Agenda

The IAGA President, Dr. Masaru Kono, called the meeting to order and asked for approval of the Agenda (the headings of the sections of these Minutes show the Agenda). Dr. F Lowes asked where, in the agenda, that the venue of the Assembly in 2001 would be discussed. Dr. Kono replied that it would be introduced under "Report of the Actions of the Executive Committee." Dr. D Baker moved acceptance of the agenda; Dr. BJ Fraser seconded and the motion passed without dissent.

II. Approval of the Minutes of the 1995 Conference of Delegates

Dr. M Gadsden moved and Dr. S-E Hjelt seconded a motion that the minutes of the meeting, which were published in IAGA News No. 34, be accepted as accurate. The motion passed without dissent.

III. Report of the Actions of the Executive Committee.

In response to a question by Dr. Ashour, it was clarified that this report (appended as Attachment B) presents the actions of the Executive Committee on behalf of IAGA since the last Conference of Delegates. According to the IAGA Statutes, the Conference of Delegates has the obligation of either accepting these actions or referring any action back to the Executive Committee for further consideration. Dr. Kono presented each action in turn, which were accepted with minor comment except as noted below.

Concerning Item 6: IUGG 1999 Birmingham General Assembly, there was discussion regarding publication of names of persons receiving travel assistance. However, it was determined that this could present difficulties. [For the Uppsala Assembly, the names were known to three members of the Executive Committee, who certified that there was a reasonable distribution of awards among the divisions as well as geographically.]

Concerning Item 7: Cosponsorships, Dr. Lastovicka pointed out that the 1997 cosponsorships were not listed. These are now included in Attachment B; and the title of the 1998 Vassouras Workshop is corrected as was pointed out by Dr. Barreto.

Concerning Item 8: 2001 IAGA/IASPEI Assembly, Dr. Lowes moved and Dr. Tarling seconded that this action be moved to a separate agenda item. The motion passed.

Concerning Item 9: Interactions with other Scientific Bodies, Dr. Atkinson noted that he had received a protest regarding the selection of the IAGA representative to SCOSTEP because the original selection by IAGA had been reconsidered and changed. A letter of apology regarding IAGA's misunderstanding of the nomination process will be sent. Dr. Ashour asked who the IUGG representative to SCOSTEP was, being worried that IAGA would be doubly represented. Dr. Roederer replied that IUGG has two representatives to SCOSTEP, one from IAGA and one from IAMAS. Bureau members are responsible to the bodies whom they represent, regardless of their personal scientific affiliation.

In reply to general questions from the delegates regarding actions of the Executive Committee, IAGA has a Web Site [<http://www.ngdc.noaa.gov/IAGA>], and, there was there a 150 SEK fee assessed by IAGA to regular registrants at the Uppsala meeting (those who selected IAGA as their primary affiliation, were not students, and did not receive a waiver of the registration fee). Income from the fee will be used to pay costs, including travel assistance, at the Uppsala and future IAGA Assemblies.

IV. Moment of Remembrance of Colleagues Who Have Died

Dr. Kono expressed regret at the loss of these colleagues, and noted that two of the those who have died since the 1995 IUGG meeting served as IAGA Presidents: Dr. Laursen (Secretary-General 1951-57; President 1957-1960) and Dr. Nicolet (President 1963-1966). The list is given in Attachment C.

V. Presentation of IAGA Honorary Membership

Dr. Kono presented M Gadsden with a Certificate of Honorary Membership in recognition of his 20 years of service to IAGA. The letter of nomination, proposed by Dr. DJ Williams and seconded by Dr. I Gough, was printed in IAGA News #36. In accepting this honor, Dr. Gadsden said:

I wish to thank the Proposers, the Executive Committee, and this Conference of Delegates for awarding me this un-looked-for

distinction. I spent twenty years on the Executive Committee – much too long– but will remain grateful to IAGA for giving me the chance to put something into the Association. This award marks my return to being the quiet, shy, modest person that I really am. Thank you, all of you.

Michael Gadsden

The updated list of Honorary Members is appended as Attachment D.

VI. Report of the Finance Committee; Dr. Barreto presented the report of the examination of the financial records for 1995 and 1996 (Attachment E) that concluded that the records were in good order. Dr. Ashour noted one clarification to the report: the payment from AGU in 1995 was not a grant but a surcharge to the registration fee paid to the Associations as arranged by IUGG. The motion for acceptance was presented by Dr. Ashour; Dr. Tarling seconded and the motion passed without dissent.

VII. Resolutions of the 1997 Assembly; Dr. Barton, chairman of the Resolutions Committee (other members were Dr. I Eltayeb and Dr. P Tarits), presented the resolutions as follows. The Resolutions, in English and French, are appended in Attachment F.

Resolution #1: proposed by Working Group V-7 (E Friis-Christiansen); seconded by D Baker; passed without dissent.

Resolution #2: proposed by Division IV and WG V-9 (C Reeves); seconded by S-E Hjelt; passed without dissent.

Resolution #3: proposed by Division V, WG V-9 (SP Maschenkov); Seconded by F Lowes; passed without dissent.

Resolution #4: proposed by Division III and WG V-2 (D Boteler); seconded by B Fraser; passed without dissent.

Resolution #5: proposed by Working Group V-2 (D Boteler); seconded by M Menvielle; passed without dissent.

Resolution #6: proposed by Division V (C Barton); seconded by D Baker; passed without dissent.

Resolution #7: proposed by Division I (N Opdyke and M McElhinny); seconded by D Tarling; passed without dissent.

Resolution #8: proposed by Division II (JO Cardus and JM Torta); seconded by P Hejda; F. Lowes noted that “Grenoble Assembly” should be replaced by “1975 IUGG General Assembly”, which was accepted. The Resolution then passed without dissent.

Resolution #9: proposed by IDC History (A Orozco); seconded by GJC Gianibelli; passed without dissent.

Dr. Fukushima asked about a Resolution of Thanks; Dr. Barton explained that the archive of resolutions did not contain such resolutions and there was a question about whether resolutions of

thanks were IAGA Resolutions, or resolutions of the Conference of Delegates. Dr. Lowes said there should be a resolution of thanks passed and recorded in the minutes. Dr. Orozco wished for the resolution to thank the Meeting Scientific Program organizers as well as the Local Organizing Committee. Dr. Kono asked if there were any objections to this suggestion. There being none, Dr. Barton then drafted a Resolution of Thanks which was approved unanimously and is included in Attachment F.

VIII. IAGA Scientific Program for the 1999 IUGG General Assembly

There was a question whether a review of the proposed 1999 Symposia was work appropriate to the Conference of Delegates, but the Secretary General asked that the entire list be viewed because this was the only opportunity for the delegates to see the combined program for the IUGG Assembly. Some of the joint sessions proposed were agreed but some had not yet been coordinated. The conveners shown are all tentative as some have not yet be asked to serve. In Birmingham, it has been agreed that IAGA Symposia will not overlap the Union Lectures (there will be four one-hour lectures during the Assembly). Dr. Baker suggested that a draft IAGA program should be laid down prior to the Program Committee meeting next month. It was confirmed that the Division and Commission Leaders and the conveners will be able to review the program and offer suggestions for improvement prior to final acceptance. The list of IAGA Symposia approved by the IUGG Program Committee will be published in IAGA News # 37.

Dr. Baag commented on the two-week length of the meeting, recalling discussion about shortening the IUGG Assembly. Dr. Kono explained that the large number of sessions proposed by IAGA and some of the other associations made it impossible to shorten the meeting to less than two weeks. Dr. Atkinson said that Division III alone had 650-700 submitted papers for the Uppsala Assembly. However, there is increasing pressure to shorten IAGA and IUGG meetings and ideas are being explored to shrink the number of sessions and arrange the business meetings in a compressed schedule.

IX. All Other Business

Proposed Revision of Statutes and Bye-Laws

Dr. Barton explained that there were inconsistencies of language in the Statutes and Bye-Laws, and in some cases they did not accurately represent the practice of the Association (e.g.,

requirement for credentials from all delegates, not just Chief Delegates). There are two kind of changes - editorial and substantive; these will be carefully distinguished in the material to be distributed to the National Correspondents (and Chief Delegates, where this information is known). A suggestion to put the proposed statutes on the Web pages was disapproved; it was considered to be confusing to distribute Statutes in a public forum that have not been approved.

Preparing for Change of Leadership in 1999

Dr. Kono explained that IAGA Leadership (Symposium conveners, WG leaders, Division and Commission Leaders, and Executive Committee) should include a higher percentage representation of those colleagues for whom English is not their first language, including scientists in developing countries. Persons now in positions of leadership should make extra efforts to offer opportunities to these colleagues, and especially colleagues earlier in their scientific careers.

Discussion Regarding Hanoi, Vietnam as the Venue for the Assembly in 2001

Dr. Joselyn opened the discussion by reading the Call for Invitations from page 3 of IAGA News No. 36 (February, 1997). Invitations were due to the Secretary General by the time of the Executive Committee meeting on August 3; two invitations were received initially but later one of them was rescinded. The Executive Committee reviewed the invitation from Vietnam (received in April, 1997), and further interviewed Dr. Kim Thoa at the Executive Committee meeting. After thorough discussion, the Committee decided that the invitation met the criteria established by IAGA for an Assembly, and accepted it.

Dr. Tarling (Chief Delegate, U.K.) expressed reservations regarding assurance of free passage of scientists, and was also worried about the small numbers of known IAGA colleagues from Vietnam as well as currency exchange issues. He suggested that other countries in SE Asia, particularly India, might be more appropriate. Dr. Thoa, Chief Delegate from Vietnam and the presenter of the Invitation, assured the Conference that these concerns had been addressed and no problems were anticipated. Regarding IAGA activities in Vietnam, she explained the Geophysical Institute of Vietnam employs more than 300 persons, takes ionosonde measurements and has an INTERMAGNET geomagnetic observatory. She was certain that there were enough persons to adequately organize the

Assembly, especially if scientists from cooperating ASEAN countries were asked to assist. Dr. Lastovicka offered that the Prague IAGA Assembly was organized by 25 people, at most. Dr. Vilas offered that the experience of organizing our last Scientific Assembly in Buenos Aires was extremely positive for Argentina and encouraged the Conference accept the possibility of meeting in a developing country.

Dr. Baag (Chief Delegate, Korea) encouraged acceptance of the invitation, noting that the willingness of Vietnam to offer the invitation was an important factor. Dr. Lowes was yet concerned by the small number of scientists in Vietnam, and worried that the local organization might be passed into the hands of professional societies such as AGU.

Dr. Hjelt (Chief Delegate, Finland) noted the recommendation of IAGA Division I that the 2001 Assembly be joint with the International Association of Seismology and the Earth's Interior (IASPEI). Dr. Thoa replied that she will present the invitation to IASPEI at their Scientific Assembly the following week, but preliminary indications were positive (Dr. Engdahl, S.G of IASPEI, and Dr. Joselyn have been in communication on this matter). Dr. Hjelt also asked that a legal document guaranteeing free passage of scientists be acquired from the government of Vietnam. Dr. Thoa said that she could arrange such a document.

There was discussion regarding the options of the Conference of Delegates to make a decision, including recommending a site visit to Hanoi to ascertain the conditions there. However, it was pointed out that it is urgent to make the decision so that planning can proceed.

Dr. Fraser (Chief Delegate, Australia) moved that the Conference of Delegates accept the invitation from Vietnam; Dr. Scherer (Chief Delegate, Belgium) seconded. Of the 25 possible votes, the count was 17 for, 2 against, with the remainder (6 votes) abstaining. Dr. Kono declared that the motion passed.

There being no other business, Dr. Kono again thanked Dr. Bostrom and Sweden for their work to organize an excellent Assembly. The meeting adjourned at 9:35 P.M.

Respectfully Submitted,
JA Joselyn, IAGA Secretary General

Attachment A:
CHIEF DELEGATES
Credentials received by 14 August, 1997

Argentina	Dr. Geof. Julio César Gianibelli
Australia	Prof. B.J. Fraser
Belgium	Dr. M. Scherer
Brazil	Dr. L.M. Barreto
Canada	Dr. Alan Jones (Gerry Atkinson 2nd week)
Croatia	Dr. Inga Lisac
Czech Rep.	Dr. Pavel Hejda
Denmark	Dr. Ole Rasmussen
Egypt	Dr. A.A. Ashour
Finland	Prof. Sven-Erik Hjelt
France	Dr. S. Perraut
Germany	Prof. V. Haak (for Dr. K.H. Glassmeier)
Iceland	Dr. Leo Kristjansson
Iran (Islamic Rep of)	Dr. N. H. Guya
Ireland	Prof. A. Brock or alternate
Japan	Dr. Oya
Korea	Prof. C. Baag
Mexico	Prof. Adolfo Orozco
Norway	Dr. Tom A. Blix
Poland	Prof. Andrzej Wernik (Dr. Jan Blecki)
Romania	Dr. Dumitru Stanica
Russia.	Prof. V.P. Golovkov (2nd week)
Slovenia	Robert Stopar
South Africa	Dr. Peter Sutcliffe
Sweden	Prof. Rolf Bostrom
Switzerland	Dr. Schnegg (8/4) & R. Neukomm (8/14)
United Kingdom	Prof. D.H. Tarling
United States	Dr. Dan Baker
Vietnam	Prof. Dr. Nguyen Thi Kim Thoa

Actions of IAGA Executive Meeting (1995-1997)*

1. Honorary Membership: Elected Michael Gadsden
2. Financial matters:
 - Appointed Finance Committee (1996): R Coles (Chair), LM Barreto, R Schlich;
 - Received report of Finance Committee (1997)
 - Approved preliminary budgets for 1997 and 1998, including support for Inter Association Commissions and printing of an IAGA Brochure
 - Recognized persons who donated money to the IAGA budget
 - Decided that 1998 Executive Committee meeting should not cost more than \$5000
3. Resolutions Committee: Appointment of C Barton (Chair), I Eltayeb, P Tarits
4. IAGA Statutes and Bye-Laws: Due to internal inconsistencies and a need for clearer language, revisions are recommended which will be sent to National Correspondents and Chief Delegates. Full discussion and a vote will be taken in Birmingham.
5. IAGA Publications
 - Three issues of IAGA News were published (# 34, December 1995; #35, July, 1996; #36, February 1997).
 - IAGA Bulletins 32s and 32t were published by ISGI
 - IAGA Guide for Magnetic Measurements and Observatory Practice (by J Jankowski and C Sucksdorff)
 - IAGA Guide for Magnetic Repeat Station Surveys (by L Newitt, C Barton, and J Bitterly)
 - Observing Noctilucent Clouds (by M Gadsden and P Parviainen)
 - IAGA Bulletin 54 (IGRF) was not published pending further discussion by Division V [which agreed in Uppsala to continue the suspension temporarily].
 - A new IAGA brochure, and possibly a video/CD-ROM, was recommended and publication costs were budgeted for 1999
6. IUGG 1999 Birmingham General Assembly
 - IAGA will be represented by David Kerridge and JoAnn Joselyn;
 - the IUGG Program Committee Chair is Kathy Whaler (U.K.)
 - Procedures for application for travel assistance used for 1997 Uppsala Assembly will also be used for Birmingham
7. Cosponsorships.
 - In 1996, IAGA cosponsored eight meetings,
 - Fourth Latin American Conference on Space Geophysics (COLAGE); April 22-26, San Miguel de Tucuman, Argentina
 - Electromagnetic Induction Workshop; July 11-19, Hokkaido, Japan

Symposium on Magnetism in Studies of Dynamics of Earth's Interior and Electrodynamics of its Far Environment; November 18-20, Colaba, Bombay, India.

International Solar-Terrestrial Predictions Workshop; January 23-27, Hitachi, Japan.

Workshop on Atmospheric Interactions: Downward and Upward Coupling to the Middle and Upper Atmosphere; February 5-16, Trieste, Italy.

Workshop for Latin American Magnetic Observatories; July 1-12, Univ. Nac. Autonoma de Mexico, Mexico.

VIIth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing; September 8-15; Niemeck, Germany.

First General Assembly of Stratospheric Processes And their Role in Climate (SPARC); December 2-6, Melbourne, Australia.

In 1997, IAGA co-sponsored one meeting:

Second Workshop on Solar Activity Effects on the Middle Atmosphere; August 18-22; Prague, Czech Republic.

For 1998, the IAGA EC adopted a new scheme for approving co-sponsorships (IAGA News #36), increased the amount of money for co-sponsorships, and approved the following meetings:

VIIIth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing; late 1998; Vassouras, Brazil

Mathematical Methods in Electromagnetic Theory; June 2-5; Kharkov, Ukraine

COSPAR; July 12-19; Nagoya, Japan

Rock, Paleo and Environmental Magnetism; September; Czech Republic

On the Problem of Cooling and Sinking of the Upper Atmosphere; summer or autumn; Troitsk, Russia

Electromagnetic Induction Workshop; August; Sinaia, Romania

COLAGE V; Latin American Space Geophysics; November; San Jose de Costa Rica.

8. 2001 IAGA/IASPEI Assembly: Accepted the invitation from Dr. Kim Thoa to host the 2001 Assembly in Hanoi, Viet Nam

9. Interactions with other Scientific Bodies; appointed the following liaisons:

COSPAR - Nagoya (1998): Eigil Friis-Christensen;

SCOSTEP: D J Williams; ILP: Sven-Erik Hjelt;

SEDI: Masaru Kono; IDNDR: Gordon Rostoker

* Edited slightly from the list presented to the Conference of Delegates for purposes of clarification and amended to add the Workshop co-sponsored in 1997 to item #7.

Attachment C:

Remembrance of Colleagues at the 1997 Uppsala
Second Conference of Delegates

A Berthelieir	M Mareschal
LG Botti	M Nicolet
R Burnside	A Paul
RL Chasson	H Ranta
M Gogoshev	M Rossberg
W Hanson	SK Runcorn
C Hatakeyama	B Tvetskoi
K Henriksen	RS Unwin
V Laursen	J Vickrey

Attachment D:

IAGA Honorary Members

L R Alldredge	4475 Chippewa Drive Boulder, CO 80303 USA
A Ashour	Faculty of Science Cairo University Giza, EGYPT
J O Cardus	Observatorio del Ebro Roquetas, Tarragona 43520 SPAIN
K D Cole	NASA/GSFC, Code 910.4 Greenbelt MD 20771 USA
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N Fukushima	Chofu-shi, Wakabacho 1-1-94 Tokyo 182, JAPAN
M Gadsden	12 Keir Street Perth PH2 7HJ Scotland, UK
J G Roederer	Geophysical Institute University of Alaska Fairbanks AK 99775-0800 USA
C.G. Sucksdorff	Armas Lindgrenint 16B 00570 Helsinki FINLAND
V A Troitskaya	NASA/GSFC Code 696 Greenbelt MD 20771 USA

Attachment E:
1997 Report Of The IAGA Finance Committee

As specified by the Statutes of the Association, the Executive Committee (EC) set up a Finance Committee comprising Dr. Richard Coles (Chairman; Ottawa, Canada), Dr. Luiz Muniz Barreto (Rio de Janeiro, Brazil) and Dr. Roland Schlich (Strasbourg, France). The committee was tasked with examining the IAGA accounts for the period 1995-1998, with reports to be made to the Conference of Delegates in 1997 and 1999.

Information for the years 1995 and 1996 was provided to the Finance Committee by the Secretary-General, Dr. JoAnn Joselyn, in the form of several documents. Reports for each of 1995 and 1996, using the format required by IUGG, were provided, along with a set of Explanatory Notes. The various amounts were stated in US\$. For 1995, the mandatory Exchange Rate specified by IUGG was used to convert pounds sterling to US\$ (\$1.617455 = 1 pound). In addition, the Secretary-General provided detailed ledger accounts for each year, along with ancillary notes from herself and from Dr. Gadsden, the former Secretary-General.

A major factor during this period has been the relocation of the IAGA bank accounts from Scotland to the USA. Variances between the mandatory IUGG exchange rate and the actual rates at times of transfer of various funds have resulted in a number of adjustments that have been absorbed into the "Miscellaneous" line items in the Reports to IUGG. Commissions and service charges have also been absorbed into the "Miscellaneous" items. In order to obtain a not-for-profit tax status in the USA, an accountant was hired and, again, these costs have been included in the "Miscellaneous" items. The Finance Committee notes that the cost of transfer from past to present Secretary-General reached \$988. In future changeovers, we recommend that the most economical transfer mechanisms be sought, and that currency exchanges be held to a minimum. We note that a small residual amount is being held in pounds sterling, to be used in support of the 1999 assembly in Birmingham, UK. Nonetheless, the Finance Committee compliments Dr. Gadsden and Dr. Joselyn for their handling of a difficult and frustrating transfer.

Income during 1995-1996 has amounted to \$123,485.93 (\$76,329.83 for 1995; \$47,156.10 for 1996). Of this, \$59,500.00 came from IUGG, \$36,835.94 from IUGG 95 sources, \$16,499.99 in grants from ICSU for printing of manuals and a flow-through

grant to INTERMAGNET, \$5576.45 from Bank interest, \$3596.26 from publications sales, and \$1477.29 from miscellaneous revenues. The business of the Association during 1995 and 1996 was conducted for \$97,943.67 (\$56,457.29 for 1995; \$41,486.38 for 1996). Of this, \$55,123.95 was related to Assemblies (offset in part by the grant from AGU), \$4,783.75 for administration, \$13,610.27 for publications, \$4,694.35 for sponsoring symposia and for meetings, \$18,869.76 related to grants and contracts, and \$861.59 for miscellaneous items.

In each of the years 1995 and 1996, IAGA income has exceeded expenditures. The balance on 1st January 1995 was \$44,838.53, and it has increased by more than 50% (\$25,542.26) during 1995-1996. This has placed the Association in a much healthier financial state, and has allowed a carry-forward of \$70,380.79 into the 1997 financial year. Bank interest during 1995-1996 is \$5576.45. This is a significant amount. However, the Finance Committee wishes to echo the suggestion of the previous Finance Committee: that the Secretary-General seek means of investing some of the Association's resources in a way that ensures optimal security while yielding higher interest rates, consistent with maintaining a not-for-profit tax status. The Finance Committee also suggests that for future years the working financial records be organized in such a way that subtotals can readily be accumulated under the general headings that are required for the report to IUGG.

Finally, the Committee congratulates both Secretaries-General for their efforts in managing the complexities of the Association's funds.

Dr. R.L. Coles Dr. R. Schlich Dr. L.M. Barreto
July 1997

Attachment F:
IAGA-97 RESOLUTIONS

Resolution # 1.

IAGA, noting the ability of satellites to provide unparalleled spatial and temporal coverage of observations of the Earth's magnetic and gravity fields, and
recognising the revolutionary contribution that an extended time-series of such observations would make to a wide spectrum of geoscientific and space science studies, and
welcoming the present plans by several nations to launch potential-field satellites within the next 5 years,
considers that now is a favourable time for an international effort to promote and coordinate satellite surveys to achieve, for the first time, continuous monitoring of geopotential field variability in the near-Earth environment, and
recommends that an "International Decade for Geopotential-Field Research" be declared to provide an international focus for such efforts.

Resolution # 2:

IAGA, recognising the importance of obtaining world-wide coverage of gravity and magnetic data, and
recognising the technical difficulties of routing satellites over regions close to the geographic poles,
urges the community to consider using conventional land, marine, and airborne methods for completing gravity and magnetic anomaly coverage in polar regions.

Resolution # 3:

IAGA, considering the importance of magnetic anomaly mapping for global geological and tectonic interpretation, and
noting the existence of numerous sets of low-level airborne and marine magnetic anomaly data and the rapid progress being made in retaining and compiling existing data,
regrets that many data sets remain classified or confidential, even after they have outlived the original purpose of acquisition, and
urges the custodians of such data sets to release them (or non-sensitive versions of them) into the public domain as soon as possible.

Resolution # 4:

IAGA, noting the effectiveness of the Polar Cap (PC) geomagnetic activity index for prompt characterisation of the magnetosphere, and recognising the great contribution of the Arctic and Antarctic Research Institute (AARI) and Danish Meteorological Institute (DMI) in producing and testing the preliminary PC index time series since 1977,

emphasises that the usefulness of such an index is dependent on having a continuous data series and

urges that all possible effort be made to maintain continuous operation of the stations contributing to this index, and to provide the PC-index to the international scientific community in near-real time via satellite data links.

Resolution # 5:

IAGA, recognising the value of preserving the uniqueness of the official IAGA indices, and

noting that estimated values of these indices produced by independent agencies for operational use are becoming confused with the official indices,

urges the producers of the estimated indices to clearly label them with "est" at the end of each index name to distinguish them from the official IAGA indices.

Resolution # 6:

IAGA, recognising the importance of geomagnetic activity indices for characterisation and prediction of a wide range of geomagnetic phenomena, and

noting the particular value of long time-series of such indices,

thanks the staff of observing stations that contribute data, the organisations that produce, disseminate, and publish indices and the national funding agencies that support these activities.

Resolution # 7:

IAGA, recognising the valuable contribution of early paleomagnetic studies of lavas for describing the palaeosecular variation of the geomagnetic field and the present need for high-quality data of this type for understanding time-averaged field behaviour in the Earth's core, and

noting that early palaeomagnetic studies used methods that have since been superseded,

recommends that attention be given to repeating early studies on important sections using modern methods

Resolution # 8:

IAGA, recognising the outstanding contribution of the Ebre Observatory in providing long time series of data on geomagnetism, ionospheric physics, seismology, meteorology, and solar activity, and the ever-increasing need for continuing these long series of data for present and future studies such as those related to Global Change, and
noting that, in accordance with IAGA resolution no 6 at the IUGG General Assembly 1975, Ebre Observatory is responsible for the collection and preparation of ssc and sfe data for publication in IAGA Bulletin No. 32,
expresses deep appreciation for the work performed by the Observatory, and
recommends that every possible effort be made to continue operation of Ebre Observatory and production of ssc and sfe data.

Resolution # 9:

IAGA, recognising the scientific value and cultural interest in the history of geomagnetism and aeronomy, and
being concerned about the risk of documents, instruments, and equipment of historical significance becoming lost or discarded,
urges that institutions, laboratories, and individuals in possession of historically important materials make every effort to identify and conserve such materials.

Resolution of Thanks:

IAGA, welcoming the great success and superb organisation of its 8th Scientific Assembly at Uppsala, and
recognising the enormous amount of work required to organise such a meeting,
expresses its deep gratitude to the Local Organisers for their tireless efforts to make the Assembly such an outstanding success.

AIGA-97 RÉSOLUTIONS

Résolution # 1

L'AIGA, constatant que les satellites permettent d'obtenir une couverture spatiale et temporelle inégalable des observations des champs magnétiques et de gravité de la Terre, et reconnaissant la contribution révolutionnaire qu'une série temporelle étendue de ce type d'observations pourrait apporter à la majorité des études dans le domaine des géosciences et de l'espace, et appréciant l'importance des projets actuels de plusieurs pays de lancer des satellites de mesure des champs de potentiel durant les cinq prochaines années, considère que le temps est venu de promouvoir et de coordonner au plan international les études par satellites en vue d'acquérir, pour la première fois, une mesure en continu de la variabilité des champs géopotentiels dans l'environnement proche de la Terre, et recommande que la prochaine décennie soit 'la Décennie pour la Recherche sur les Champs Géopotentiels' afin d'aider à focaliser les efforts de recherche au niveau international.

Résolution # 2

L'AIGA, reconnaissant l'importance d'obtenir une couverture de données de gravité et magnétiques à l'échelle planétaire, et reconnaissant les difficultés techniques inhérentes à l'obtention de trajectoires de satellite au dessus des régions polaires, demande instamment à la communauté d'envisager de compléter la couverture des anomalies de gravité et magnétiques par des méthodes classiques d'observations continentales, marines ou atmosphériques dans les régions polaires.

Résolution 3

L'AIGA, considérant l'importance de la cartographie des anomalies magnétiques dans l'interprétation géologique et tectonique globale, et constatant l'existence de nombreuses séries de données d'anomalies magnétiques marines et aériennes de basse altitude et les progrès rapides fait dans le domaine de la conservation et de la compilation des données existantes, regrette que beaucoup de séries de données restent classifiées ou confidentielles, même au delà de la période pour laquelle elles étaient pertinentes, et demande instamment aux conservateurs de ces séries de les faire passer dans le domaine public (ou en fournir une version banalisée) et ce, le plus vite possible.

Résolution # 4

L'AIGA, constatant l'efficacité de l'indice d'activité géomagnétique 'Polar = Cap' PC (calotte polaire) pour caractériser rapidement la magnétosphère, et reconnaissant la contribution remarquable qu'ont apportée l'Institut de Recherches Arctique et Antarctique (IRAA) et l'Institut Météorologique Danois (IMD) dans l'élaboration et les tests des séries temporelles de l'indice PC préliminaire depuis 1977, attire l'attention sur le fait que l'utilité de ce type d'indice dépend de la disponibilité de données en séries continues, et demande instamment que tout soit fait pour que les stations qui contribuent à cet indice soient maintenues en activité de manière continue et pour que l'indice PC puisse être à la disposition de la communauté scientifique internationale en temps quasi-réel via les liaisons satellites.

Résolution # 5

L'AIGA, reconnaissant la valeur de conserver le caractère unique des indices officiels AIGA, et constatant que des valeurs estimées de ces indices publiées par des organismes indépendants pour utilisation immédiate, tendent à être confondues avec les indices officiels, demande instamment aux auteurs de ces indices estimés de les nommer clairement en ajoutant le suffixe "est" à la fin de chaque nom d'indice de manière à les distinguer des indices officiels IAGA.

Résolution # 6

L'AIGA, reconnaissant l'importance des indices d'activité géomagnétique pour la caractérisation et la prédiction d'un grand nombre de phénomènes géomagnétiques, constatant la valeur particulière des longues séries temporelles de ces indices, remercie les équipes des stations d'observations qui contribuent à l'acquisition des données, les organismes qui produisent, distribuent et publient ces indices et les organismes nationaux de financements qui soutiennent ces activités.

Résolution #7

L'AIGA, reconnaissant la contribution notable des premières études paléomagnétiques de laves dans la description de la variation paléoséculaire du champ géomagnétique et le besoin, à présent, de données de qualité supérieure de ce type pour comprendre le comportement moyen du champ dans le noyau de la Terre, constatant que les premières études paléomagnétiques utilisaient des méthodes aujourd'hui révolues, recommande que les premières études soient répétées sur des sections importantes en utilisant des méthodes modernes.

Résolution # 8

L'IAGA, reconnaisant la contribution remarquable de l'Observatoire d'Ebre dans l'acquisition de longues séries temporelles de données en géomagnétisme, en physique de l'ionosphère, en séismologie, en météorologie et sur l'activité solaire, et le besoin sans cesse croissant de poursuivre ces séries de données pour les études actuelles et futures telles que celles associées au programme 'Global Change' (Changement Global),

constatant qu'en accord avec la résolution AIGA No.6 adoptée durant l'assemblée générale de l'UGGI en 1975, l'Observatoire d'Ebre est responsable de l'acquisition et de la préparation des données SSC et SFE pour leur publication dans le bulletin AIGA No. 32,

apprecie grandement le travail qui a été accompli par l'Observatoire, et recommende que tout soit fait pour que l'Observatoire d'Ebre poursuive son travail et la production des données SSC et SFE.

Résolution #9

L'IAGA, reconnaisant la valeur scientifique et l'intérêt culturel de l'histoire du géomagnétisme et de l'aéronomie, et se sentant concerné par le risque que des documents, des instruments et de l'équipement, historiquement importants, soient perdus ou mis au rebut,

demande instamment que les institutions, les laboratoires et les individus, en possession de matériel historique, apportent un soin particulier à l'identification et à la conservation de ce type de matériel.

Résolution #10

L'AIGA, se réjouissant du grand succès et de l'excellente organisation de sa 8ème assemblée scientifique qui s'est tenue à Uppsala, et étant conscient de la quantité énorme de travail qu'il faut accomplir pour organiser ce type de réunion, exprime sa profonde gratitude aux Organisateurs Locaux pour leurs efforts infatigables à faire de cette assemblée un grand succès.

translation by Pascal Tarits, Université de Bretagne Occidentale

New Working Group Leaders, Appointed in Uppsala

Working Group I-1: Theory of Planetary Magnetic Fields and
Geomagnetic Secular Variation

Chair: Jeremy Bloxham bloxham@geophysics.harvard.edu
Department of Earth and Planetary Sciences
20 Oxford Street tel: +1 617 495 9517
Harvard University fax: +1 617 495 8839
Cambridge, MA 02138 USA

Co-Chair: Ivan Cupal ic@ig.cas.cz
Geophysical Institute tel: +420-2-67103342
Bocni II/1401 Prague 4 fax: +420-2-761549
141 31 CZECH REPUBLIC

Working Group II-B: Thermospheric Dynamics

Chair: Alan D. Aylward alan@apg.ph.ucl.ac.uk
Atmospheric Physics Laboratory
Dept. Physics and Astronomy, University College London
67-73 Riding House Street, London W1P 7PP UK

Working Group II-C: Meteorological effects on the Ionosphere

Chair: Prof. Jose R. Manzano jrmanza@herrera.unt.edu.ar
Laboratorio de Ionosfera, Instituto de Fisica
Facultad de Ciencias Exactas y Tecnologia
Universidad Nacional de Tucuman
Av. Independencia 1800,
4000 - Tucuman Argentina

Co-chair: Dr. Werner Singer singer@iap-kborn.de
Institute of Atmospheric Physics tel: +49-38293-68230
Rostock University fax: +49-38293-6850
Schlossstrasse 4-6
D-18225 Kuhlungsborn Germany

Co-Chair: Dr. (Mrs.) Antonina N. Fahrutdinova
Kazan State University antonina.fahrutdinova@ksu.ru
Kremlevskaya Str. 18 fax: 7 8432 318176
420008 Kazan Russia

Notifications

The IAGA Secretariat has been notified of a change of address for
the following colleagues:

Vania K. Jordanova (US)	P.V. Sharma (Denmark)
David McA. McKirdy (England)	H. Schwentek (Germany)_
G. Pillet (France)	T. Yukutake (Japan)
S. Uyeda (Japan)	

Thank you for sending your new addresses.

Contributors to IAGA

In IAGA News No. 36, it was reported in the Foreword that the Executive Committee suggested that a voluntary cash contribution to IAGA would be an appropriate way for our constituents to support IAGA's objectives. IAGA's non-profit tax status allows tax-exempt contributions and could be useful especially to persons paying US taxes. This action was considered necessary because traditional funding sources (primarily subvention from IUGG) are being cut. Each Association within IUGG is facing this problem.

We asked those of you who are able, to contribute \$20 or more directly to IAGA. The persons listed below responded to this plea, and we gratefully acknowledge these donations. Donations received before the Uppsala Assembly were used for travel assistance to the Assembly.

1997 Benefactors to the Association

(as of October, 1997)

C.E. Barton

H. Chivers

H Coffey

J.A. Joselyn

F.E.M. Lilley

K.L. Svendsen

IUGG 1999 Scientific Program

The following information is preliminary. The most recent information about the Assembly is posted on the Internet site:

<http://www.bham.ac.uk/IUGG99/home.htm>

To receive the IUGG 1999 Assembly Circular by mail you must ask the IUGG organizers for it.

The Circular, to be mailed in May 1998, will contain the Scientific Program and instructions to submit abstracts and apply for travel assistance. The Abstract deadline will be December 15, 1998. In early 1999, the Final Circular, containing registration and housing information, will be issued.

The easiest way to register to receive the Circulars is by using the form on the Web site (click on "form"). For direct access, the address of the form is

<http://www.bham.ac.uk/IUGG99/register.htm>

An alternative method to register is to send the following information by e-mail to **IUGG99@bham.ac.uk** or by fax to 44 121 414 4942.

1. Your Name (including title, if any; example: Dr. JoAnn Joselyn)
2. Your Postal Address where the Circular should be sent
3. Your Telephone and Fax numbers, including country code
4. Your e-mail address (if any)

The IUGG Program will consist of the Programs prepared by the 7 IUGG Associations, including 49 Symposia that are joint between two or more Associations, a limited number (approximately four) of Union Lectures, which have not yet been announced, and 8 Union Symposia. Some of these Symposia will consist of invited papers only, but some will solicit contributions. The Assembly Circular will identify the conveners of each Symposium and the guidelines for submitting papers. The following titles are tentative.

Union Symposia

Public Understanding of Science
Networks and New Techniques

Megacities – Focusing the Geophysical Sciences on Urban Issues
Geophysical Hazards and Risks

Earth Systems Models and Earth System Predictability
Global Change and Predictability

Volcanism – Sources, Consequences, and Mantle Plumes
Geophysics and the Comprehensive Test Ban Treaty

IAGA Symposia

Symposia Titles and some conveners are pending confirmation. Please notify Division Leaders if errors are noted. Short session descriptions will be printed in the next IAGA News.

Division I:

1.01 The Geodynamo: Theory; Observations; Models

(joint with Division V)

Conveners: DJ Ivers (Australia); M Kono (Japan); C Jones (UK)
Co-Conveners: K Hoffman (US); J Heirtzler (US); V Shapiro (RU)

1.02 Electromagnetic Induction Studies: Observations; Modeling and Interpretation; Theory

Conveners: MR Ingham (NZ); J Booker (US); MS Zhdanov (US)
Co-Conveners: C Sainato (Argentina); T Harinarayana (India);
V Pec (CZ)

1.03 Paleomagnetism: Contributions to the Paleomagnetic Field – The Paleomagnetic Field from Secular Variation to Reversals: Observations, Models and Applications; Absolute and Relative Paleointensity

Conveners: R Coe (US); L Tauxe (US)
Co-Conveners: X Quidelleur (France); C Constable (US);
H Itota (Japan); N Thomas (UK)

1.04 Paleomagnetism: Contributions to Tectonics – Paleomagnetism of Caledonian and Hercynian Belts in Europe; Methods and Applications of Magnetic Anisotropy

Conveners: J Tait (Germany); G Borradaile (Canada)
Co-Conveners: D Tarling (UK); F Hrouda (CZ); L Sagnotti (Italy)

1.05 Rock Magnetism – Methods and Approaches in Rock Magnetism; Magnetic Properties as Environmental Proxy Parameters

Conveners: K Fabian (Germany); A Roberts (UK)
Co-Conveners: O Ozdemir (Canada); J King (Botswana);
Torii (Japan)

1.07 Separation of Internal and External Field Variations

Convener: N Olsen (Denmark)

Co-Convener: BR Arora (India)

1.09 Characteristics of the Lithosphere-Asthenosphere Boundary
joint with IASPEI and ILP

Convener: A Jones (Canada)

Co-Conveners: ILP: O'Reilly (Australia); IASPEI: Kind (Germany)

1.12 Geophysical Signatures of Meteoritic Impacts

joint with IAG, IAHS, ILP

Conveners: V(Buck) Sharpton (US)

Co-Conveners: A Treiman (US); L. Pesonen (Finland); Hildebrand (Canada); Warner (UK); L Marin (Mexico); Juhler (Sweden)

1.13 Geophysical Measurements Relevant to Hydrogeological Processes and Modeling; joint with IAHS, IASPEI; IAPSO

Convener: P Tarits (FR)

Co-Convener: A Skinner (UK)

1.14 High-resolution Geophysical Studies of Mineralized Zones
joint with IASPEI

Convener: B Christiansen (Denmark)

Co-Convener: Milkereit (Germany)

1.15 Magnetostratigraphy and Time Scales From Excursions to Superchrons

Convener: C Langereis (Netherlands)

Co-Conveners: M Pringle (UK); L Brown (US)

1.18 Electromagnetic Methods for Monitoring Earthquakes and Volcanic Eruptions;

joint with IASPEI, IAVCEI

Convener: M Johnston (US)

Co-Conveners: S Uyeda (Japan); S Park (US)

1.19 Mantle/Core Structures, Properties, Coupling, and the Geodynamo; joint with SEDI, IAG, IASPEI, IAVCEI

Convener: D Loper (US)

Co-Convener: S-P Poirier (France)

Division I is also a co-convener of 10 other symposia

Division II:

2.01 Imaging Riometers, Radars, and D-region Chemical Models

Convener: P Stauning (Denmark)

Co-Conveners: P Collis (Sweden); E Turunen (Finland)

2.02 Electrodynamic Processes in the Generation of Ionospheric Irregularities (Observations, Theory, Simulations)

Convener: R Pfaff (US)

Co-Conveners: AM Hamza (CA); J-P Villain (FR); T Ogawa (JP)

2.03 Toward Answering Critical Problems in Ionospheric Research

Convener: B Thide (Sweden)

Co-Convener: M Ruohoniemi (US)

2.04 Middle atmosphere electrodynamics: influences and processes; joint with ICMA and SCOSTEP

Convener: S Kirkwood (Sweden)

Co-Conveners: F-J Lübken (GR); D Sentman (US); E Williams (US)

2.05 Mesosphere-Thermosphere-Ionosphere Coupling and Energetics; joint with ICMA and SCOSTEP

Convener: JM Forbes (US)

Co-Conveners: J Lastovicka (CZ); MA Abdu (Brazil); G Crowley (US); S Fukao (JP); R Sridharan (IN); A Richmond (US)

2.06 Effects of solar variability, solar wind and high energy particles on the middle atmosphere; joint with Division IV, ICMA and SCOSTEP

Convener: ES Kazimirovsky (RU)

Co-Conveners: Div IV: MA Shea (US); ICMA: CH Jackman (US)

2.07 Ionospheric impact on Magnetosphere-Ionosphere (M-I) coupling; joint with Division III

Convener: J Sojka (US)

Co-Convener: A Yau (CA)

Division II is also a co-convener of 10 other symposia

Division III

3.01 Reporter Reviews

Convener: M Lockwood (UK)

3.02 Magnetospheric Substorm Onset: Observation, Theories, Models

Convener: AT Lui (US)

Co-Conveners: Y Galperin (Russia); H Opgenoorth (Sweden)

3.03 Determination of Polar Cap Boundary: implications for magnetospheric energetics

Convener: K Kauristie (Finland)

Co-Conveners: M Lockwood (UK); K Shiokawa (Japan)

3.04 Growth, Propagation and Damping of ULF waves in Magnetospheres

Convener: C Waters (Australia)

Co-Conveners: R Denton (US); K Yumoto (Japan)

3.05 Acceleration, Transport and Losses in the inner Magnetosphere

Convener: G Reeves (US)

Co-Conveners: D Heyndrickx (Belgium); K Takahashi (Japan)

3.06 Auroral Processes: Magnetosphere, ionosphere-thermosphere coupling, arcs, and microprocesses; joint with Division II

Convener: R Strangeway (US)

Co-Conveners: D Rees (UK); G Lu (US); GT Marklund (Sweden)

3.07 Foreshock, bow shock, magnetosheath, magnetopause, cusp: Structure, transients and waves; joint with Divisions II and IV

Convener: D Sibeck (US)

Co-Conveners: A Rodger (UK); K Paularena (US); M Lee (US); A Wright (UK)

3.08 Magnetotail dynamics and relationship to high-latitude ionospheric phenomena; joint with Division II

Convener: T Nagai (JP)

Co-Conveners: M Lester (UK); L Lyons (US)

3.09 Quantitative tests and intercomparison of solar-terrestrial and geomagnetic field models; joint with Divisions II, IV, V

Convener: J Raeder (US)

Co-Conveners: T Fuller-Rowell (US); T Onsager (US); J Linker (US)

3.10 The Magnetosphere and Ionosphere under Northward IMF; joint with Division II

Convener: O Troshichev (RU)

Co-Convener: D Walker (US)

Division III is also the co-convener of 5 other symposia

Division IV

4.01 Cycle 23 Solar Events and Heliospheric Consequences

Convener: B Thompson (US)

4.02 CMEs, Eruptions and Flares: Onsets and Relationships

Convener: B Schmieder (France)

Co-Conveners: Shibata (Japan); Dere (US); Plunkett (US); Webb (US); Hoeksema (US)

4.03 Solar Magnetic Field: Reversals, Polar Field, Dynamo

Convener: V Obridko (RU)

4.04 Energetic particles in the heliosphere: Local and interstellar sources, solar cycle dependence and 3D structure

Conveners: N Schwadron (US); T Zurbuchen (US)

Co-Conveners: GM Simnett (UK)

4.05 New Insights on Coronal Heating and Solar Wind Acceleration

Convener: E Leer (Norway)

4.06 Reporter Reviews & VideoFest

Convener: J Luhmann (US)

4.07 Solar Variability and Climate; joint with IAMAS

Convener: J Pap (US)

Co-Conveners: C Froelich (Switzerland)

4.08 Interplanetary medium and geophysical phenomena during geomagnetic storms; joint with Divisions II, III, and V

Convener: B Tsurutani (US)

Co-Conveners: J Lastovicka (CZ); Y Feldstein (RU);

V Papitashvili (US)

4.09 Turbulence and Solitary Structures in Space Plasmas: Theory, Experiment, Analysis; joint with Division III

Convener: V Krasnosel'skikh (France)

Co-Conveners: K Stasiewicz (Sweden)

4.10 Planetary Atmospheres, Ionospheres, Magnetospheres and Solar Wind Interactions; joint with Divisions II and III

Convener: K Tsuruda (JP)

Co-Conveners: K Khurana (US); G Keating (US)

Division IV is also a co-conveners of 4 other symposia

Division V

5.01 Geomagnetic Observatories and Repeat Surveys: Instrumentation, Practice, and Analysis; joint with Interdivisional Commission on Developing Countries

Convener: J. Rasson (Belgium)

Co-Conveners: L Barreto (Brazil); L Hegymegi (Hungary)

5.02 Ocean Bottom Geomagnetic and Geophysical Observatories; joint with IASPEI

Convener: AW Green (US)

Co-Conveners: A Chave (US); K Suyehiro (Japan)

5.05 Space Weather Forecasting and Effects; joint with Division III

Convener: D Boteler (Canada)

Co-Conveners: D Baker (US)

5.06 Production and Use of Geomagnetic Indices

Convener: M Menvielle (France)

Co-Conveners: H Linthe (Germany)

5.07 Earth's Gravity and Magnetic Field from Space

joint with IASPEI and IAG

Convener: E Friis-Christensen (Denmark)

Co-Conveners: P Taylor (US); R Rummel (Germany)

5.08 Analysis and Interpretation of Oersted and Other Satellite
Magnetic Field Survey Data; joint with Division I

Convener: J Quinn (US)

Co-Convener: A Jackson (UK)

5.09 Near Earth Magnetic Reference Field Models

Convener: T Sabaka (US)

Co-Convener: J Miguel Torta (Spain)

5.10 Polar Geophysics; joint with IAG, IAMAS, IAHS, IAVCEI,
IAVCEI, IAPSO

Convener: P Taylor (US)

Co-Conveners: J Turner (UK); Dietrich (Germany); K Fujita (US);
M Lepparanta (Finland)

5.11 Contribution of Rock Magnetism (Petrophysics) to Anomaly
Interpretation; joint with Division I

Convener: S McEnroe (Norway)

Co-Convener: J Korhonen (Finland)

5.12 Standardized Satellite Magnetic Anomaly Map/World
Magnetic Anomaly Map (Land and Sea)

Convener: T Ishihara (Japan)

Co-Convener: J Arkani-Hamed (Canada)

5.13 Solid Earth Geophysical Data Fusion and Analysis Methods
joint with IAG and IASPEI

Convener: M Purucker (US)

Co-Conveners: W Mooney (US)

Division V is also the co-convener of 7 other symposia

Interdivisional Commission on History

6.01 Long and Short Term Variability in Sun's History and
Global Change; joint with Division IV

Convener: W Schröder (Germany)

Co-Conveners: G Gregori (Italy); A Orozco (Mexico);
H Svensmark (Denmark)

6.02 400 Years of Geomagnetism

Convener: A. Orozco (Mexico)

Co-Conveners: W Schröder (Germany); G Gregori (Italy)

Interdivisional Commission on Developing Countries

7.02 Equatorial Geomagnetism and Aeronomy

Convener: BR Arora (India)

Co-Conveners: LM Barreto (Brazil); NTK Thoa (Vietnam);
V Doumouya (Senegal)

IAGA Bulletins For Geomagnetic Data

IAGA Bulletin no 32u - Geomagnetic Data for 1990

is now available. This Bulletin contains:

- definitive values of geomagnetic data as prepared by the ISGI Collaborating Institutes; IAGA indices for the current year : aa, am (Km), Kp (ap), Dst, AE, and Rapid Variations: ssc, sfc;
- the monthly and yearly mean values;
- the list of magnetic observatories with the opening and closing dates of operation;
- an introductory text, giving updated indications on the derivation processes, used observatories, and addresses of collaborating Institutes and Data Centers;
- a data diskette

This Bulletin, as well as previous editions in the series may be ordered from the ISGI Publications Office; CETP - 4, avenue de Neptune, 94107 SAINT MAUR CEDEX - FRANCE;

Fax : 33 (1) 48 89 44 33; Tel : 33 (1) 45 11 42 30

Email : ISGI.PUBOFF@cetp.ipsl.fr

The ISGI Publications Office is hosted at the Centre d'etude des Environnements Terrestre et Plantaires (CETP, Saint-Maur, France), under the responsibility of Michel Menvielle.

The prices are as follows (valid in 1997):

IAGA Bulletin no 32 :

1970 to 1980 : each issue 50 FF (about 10 \$)

package 1970-1980 (11 Bull.) 400 FF (about 80 \$)

1981 to 1987 : each issue (diskettes included) 100 FF (about 20 \$)

1988 to 1989 : each issue (diskettes included) 200 FF (about 40 \$)

Diskettes alone, for former subscribers only, each 40 FF (about 8 \$)

IAGA Manuals and Guides in Print

To order the following publications, contact the IAGA Secretariat:
Dr. Jo Ann Joselyn, NOAA R/E/SE, 325 Broadway, Boulder, CO
80303-3328 USA; Fax 1 303 494 0980 or 1 303 497 3645;
e-mail: jjoselyn@sec.noaa.gov, or, iaga.joselyn@filebank.com

Prices do not include shipping and handling. Payment using
Mastercard or Visa credit cards is now available.

**IAGA Guide for Magnetic Measurements and
Observatory Practice**, by J Jankowski and C Sucksdorff; 1996;
Price: \$50; 232 pages; ISBN: 0-9650686-2-5

This Guide provides comprehensive information about how to
organize and run a magnetic observatory and make magnetic
measurements.

IAGA Guide for Magnetic Repeat Station Surveys
by L.R. Newitt, C.E. Barton, and J. Bitterly; 1997;
Price: \$25; 120 pages; ISBN: 0-9650686-1-7

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

Observing Noctilucent Clouds

by M Gadsden and P Parviainen; 1995;
Price: \$24.95 (USA) or £9.95 (UK); ISBN: 0-9650686-0-9

This manual and instruction book concerns noctilucent clouds, a
phenomenon seen in the summer months, shining in the poleward
sky at nighttime. Lying at a height of 80-85 kilometers, the clouds
mark a boundary between meteorology and space physics. The book
gives practical advice for taking visual observations, and
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.

You may order this manual directly from Dr. Gadsden, 12 Keir
Street, PH2 7HJ, Scotland, UK; Telephone/fax: +44 1738 440 358
e-mail: m.gadsden@aberdeen.ac.uk

Other Publications of Interest to the IAGA Community

IAGA News will devote a limited amount of space in each issue to draw attention to these publications.

Introduction to Geomagnetic Fields

by Wallace H. Campbell, 1997, 304 pages, \$64.95
Cambridge University Press; ISBN: 0-521-57193-6
110 Midland Avenue, Port Chester NY 10573-4930 USA

Contents: Earth's Main Field, Field Variations at Quiet Times, Solar-Terrestrial Activity, Measurement Methods, Applications; Appendices; References; Index.

See Review on page 35.

Noctilucent Clouds : Seen from Space

“Serebristiye Oblaka: Vzgyad iz Kosmosa”

by AI Lazarev and VP Savinykh, 1997, 94 pages, \$25
Hidrometoeizdat, Saint Petersburg
Novosmolenskay Riverside 4 fl 148
Sankt-Petersburg 199226 RUSSIA

Contents: Survey of characteristics of noctilucent clouds, based on both ground-based and space-borne observations, including reports from Salyut-4, Salyut-6, SME, Salyut-7, and Mir. Final chapter deals with summer mesospheric radio-scattering layers. References.

Linear Algebra, Geodesy, and GPS

by Gilbert Strang and Kai Borre, 1997, 640 pages, \$60
Wellesley-Cambridge Press, ISBN 0-9614088-6-3
Box 812060, Wellesley MA 02181 USA, email
gs@math.mit.edu; <http://www-math.mit.edu/~gs>

Contents: the GPS section describes the basic structure of the GPS system, the algorithms that yield accurate positions from inaccurate pseudoranges, and finally the Kalman filtering (and "Bayes" filtering) that give superior accuracy in postprocessing a long series of observations.

The following publications are available from W. Schröder at Hecchelstrasse 8, D-28777, Bremen-Roennebeck, GERMANY (See IAGA News No. 36 for more information).

Catalogue of Aurorae Borealis (502-1735)

ed. W. Schröder, 1996, illustrated, 15 DM (\$10 US) plus postage

Ertel's Potential Vorticity

ed. W. Schröder and Hans-Jürgen Treder, 1996, illustrated, 30 DM (\$20 US) plus postage

Book Review: Introduction to Geomagnetic Fields
by Wallace H. Campbell; Cambridge University Press, 1997
ISBN 57193-6, 325 pages, \$69.95

This book fulfills its promise to provide simplified but wide-ranging tutorial information about Earth's magnetic field and its variability. The author assumes very little prior knowledge on the part of the reader, minimal mathematical sophistication, and defines all terms used. This book would be useful not only to those wishing a general overview of geomagnetism, but also to specialists needing to place their work in context within this broad arena of geophysics which extends from Earth's core to the surface of the Sun, and includes the most basic concepts of the origins of planetary magnetic fields but reaches toward new frontiers in biological science.

The book has five main chapters and three Appendices. Appendix C includes descriptions of computer program files that can be obtained either via free download over the Internet, or at nominal cost on a 1.4 Mb floppy disk distributed by the NOAA National Geophysical Data Center in Boulder, Colorado. The Chapters follow a logical progression beginning with the Earth's Main Field, and then Field Variations at Quiet Times; Solar-Terrestrial Activity; Measurement Methods, and finally Applications. The Applications chapter is a particular strength of this book, in that this material is not often found bundled with the other topics. Some of the subtopics in this chapter are not without controversy, and the reader should be aware that this material is infused with the author's personal experiences and biases.

Wallace Campbell, recently retired from the US Geological Survey, began his career at the University of Alaska in 1959 after earning his Ph.D. from the University of California at Los Angeles. He worked with Dr. Sydney Chapman in Alaska, and was a colleague of Dr. S. Akasofu and Dr. S. Matsushita. He was a scientist at NOAA in Boulder from 1960 until 1973 when he joined the USGS. His 123 scientific publications have established his authority on geomagnetic storms and pulsations, quiet variations of geomagnetic fields, upper mantle electrical conductivity, and induced currents in pipelines. He has held leadership positions in several IAGA Working Groups, and continues to provide guidance on a variety of geomagnetic topics to students and practitioners world-wide in his present position as Guest Scientist at the World Data Center A in Boulder, Colorado.

JAJ

UPCOMING SCIENTIFIC MEETINGS CO-SPONSORED BY IAGA

Biennial IAGA Assemblies are useful to summarize the state of scientific progress and to hold business meetings that unify and promote global scientific objectives. However, smaller regional and topic meetings have benefits that include in-depth scientific discussions, increased opportunities for student and young scientist participation, and leadership training especially in developing countries. The procedures to request IAGA Co-Sponsorship of a meeting, including the possibility of financial support, are given on the IAGA Internet Home Page, and were printed in IAGA NEWS. NO. 36 (February, 1997).

The following meetings have been approved by action of the Executive Committee for IAGA Co-Sponsorship.

June 2-5, 1998, Kharkov, Ukraine
Mathematical Methods in Electromagnetic Theory
Point of Contact: Dr. Alexander I. Nosich, Department of
Computational Electromagnetics, Institute of Radiophysics and
Electronics, National Academy of Sciences
Ulitsa Proskury 12, Karkov 310085 Ukraine
Fax: +380 572 377 380; alex@emt.kharkov.ua

July 6-9, 1998, Hotel Izvestiya, Troitsk, Russia
International Working Meeting On the Problem of Cooling and
Sinking of the Upper Atmosphere: a Sensitive Indicator of Climatic
Changes
Point of Contact: Prof. G A Sobolev, President, National
Geophysical Committee, Russian Academy of Science,
Molodezhanaya 3, 117296 Moscow, Russia
sobolev@uipe-ras.scgis.ru

July 12-19, 1998, Nagoya, Japan
32nd COSPAR Scientific Assembly
<http://www.copernicus.org/COSPAR/COSPAR.html>
especially Session D0.5 "Space Weather: Physics and Applications"
Point of Contact: Dr. Gordon Rostoker, Department of Physics,
University of Alberta, Edmonton, Alberta T6G 2J1 Canada
Fax: +1 403 492 4256; rostoker@space.ualberta.ca

August 16-23, 1998, Sinaia, Romania
Electromagnetic Induction Workshop
<http://www.cg.NRCan.gc.ca/mtnet/workshops/sinaia/sinaia.html>
Point of Contact: Dr. Alan G Jones, Geological Survey of Canada,
1 Observatory Crescent, Ottawa, Ontario, K1A 0Y3 CANADA
Fax: :+1 613 992 8836; jones@cg.NRCan.gc.ca

August 31 - September 5, 1998, Castle of Hrubá Skála,
Czech Republic
New Trends in Geomagnetism: Palaeo, Rock and Environmental
Magnetism <http://www.ig.cas.cz/circ1.htm>
Point of Contact: Dr. Eduard Petrovsky, Geophysical Institute,
Czech Republic Academy of Science, Bocni II/1401, 141 31 Praha,
Czech Republic; Fax: +420 2 76 15 49; edp@ig.cas.cz

Sept/Oct, 1998, Vassouras, Brazil
VIIIth IAGA Workshop on Geomagnetic Observatory Instruments,
Data Acquisition and Processing
Point of Contact: Dr. Luiz Muniz Barreto, Observatorio Nacional,
Rua General Bruce, 586, 20921-400 Rio de Janeiro, RJ, BRASIL
Fax: +55 21 580 6071 or +55 21 580 3782; barreto@obsn.on.br

November, 1998, San Jose de Costa Rica
Latin-American Space Geophysics (COLAGE) Conference V
Point of Contact: Dr. José Fc. Valdés-Galicia, Fisica Espacial,
IGf/UNAM, Ciudad Universitaria, 04510 Mexico, D.F. Mexico

February/March, 1999, Pune, India
International Workshop "Long Term Changes and Trends in the
Atmosphere"
Point of Contact: Gufran Beig, Indian Institute of Tropical
Meteorology, Dr. Homi Bhabha Road NCL-Post Office
Pashan, PUNE -411 008, INDIA
Fax: (+91-212)-347825; beig@tropmet.ernet.in

July 19-39, 1999, Birmingham, England
XXII IUGG General Assembly
<http://www.bham.ac.uk/IUGG99/home.htm>
Point of Contact: IUGG99, School of Earth Sciences, University of
Birmingham, Edgbaston, Birmingham B15 2TT, UK
Fax: 44 121 414 4942; IUGG99@bham.ac.uk
See additional information on page 25.

On the Occasion of Jubilee

Prof. Dr. Edward S. Kazimirovsky, Russia

The anniversary birthday or jubilee always gives cause for reminiscences - how you lived and what you have done in your life, and what trace (even if microscopic) you have left in your job, in science. And if someone else is interested, you are very lucky. So, I was very happy to receive the congratulation of IAGA on the occasion of my 60th birthday, and encouragement to publish in *IAGA News* a portion of my remarks concerning 40 years of scientific activity.

What was the beginning of my life in the ionospheric physics? It was the International Geophysical Year (IGY) of 1957 - 1958, when nearly 80000 scientists and volunteers from 67 countries gathered data at about 8000 stations, from pole to pole on the planet Earth in an ambitious endeavour to add to the storehouse of knowledge about our shared habitat. And one of the 8000 stations taking geomagnetic and ionospheric measurements, was located in the heart of East Siberia, near Baikal Lake and Irkutsk (52 N 104 E). At that time I was a 20-year-old student of the last course of Irkutsk State University Physical Department; in July 1957 I got the position of technician at the ionospheric station. Since then 40 years have passed. All these years I have spent at the same place, but no longer in the small ionospheric observatory belonging to the Ministry of Telecommunication, but instead in the large Institute of Solar - Terrestrial Physics, built by the Russian Academy of Sciences from the old magnetic - ionospheric station.

What have I performed in science? Perhaps only three real things. Firstly, I actively participated in the organisation of the ionospheric drift measurements near Irkutsk (the first measurements made on these latitudes in the area from Moscow to Japan) and then I created one of the first empirical models of the global ionospheric circulation and demonstrated the considerable nonzonality of this circulation or so called "longitudinal effect". And finally I have some important experimental evidence of interaction among different atmospheric layers - the meteorological effect on the ionosphere. These results were generally recognised and included in authoritative reviews, monographs and even partly in the International Reference Ionosphere.

But the most important thing in my scientific life was and still remains the international co-operation, the close and friendly contacts with my colleagues over the world. The unrestricted access to scientific data and to research results and the freedom of scientists to travel to any

country regardless of their political and/or ideological orientation fortunately were guiding principles during these last 40 years. Of course, it was especially valuable for me, because for many years I lived and worked in USSR, behind the "Iron Curtain." Geomagnetism and Aeronomy as part of Solar - Terrestrial Physics is a basic science, a space science and an environmental science. As such, adequate research is impossible without real international co-operation. This is the reason why cooperation was successfully even during the Cold War regardless of all attempts to control and restrict our personal contacts. IAGA Assemblies, COSPAR Meetings, STP Symposiums were the forums where we had the opportunity to present the results of our participation in International Scientific Programs such as IGY, IQSY, MAP, MLTCS, STEP etc. The importance of the understanding of the situation and goodwill of some international scientific leaders can scarcely be exaggerated. They tried to find the ways to support the good work of "soviet scientists" psychologically and financially. I will never forget the support and goodwill of J.W.G. Beynon, H. Rishbeth, J. Roederer, S.A. Bowhill, R. Roper, C.H. Liu, J. Allen, K. Rawer, E.A. Lauter, J. Taubenheim, J. Lastovicka, D. Offerman, A. Manson, S. Kato, H. Oya, K. Cole, V.A. Troitskaya and many other of my dear colleagues, who were chairman of International Steering Committees, Working Groups, convenors of Symposia, Workshops, Seminars etc. and made their best efforts to support my fruitful participation in the international programs and meetings. Sometimes I was invited to USA, Europe and Japan for joint work (W.B. Hanson, S. Radicella, K. Sprenger, R. Schminder, B.A. de la Morena, J. Seco, T. Tsuda and others) and I am proud to be the coauthor of many joint papers.

During last 40 years I have witnessed enormous changes in scientific knowledge as well as geopolitical circumstances. Impressive new information was obtained on the physics, chemistry, structure and dynamics of the upper and middle atmosphere, on the magnetosphere and ionosphere. The Cold War has ended the competition between superpowers for the conquest of space. But maybe the "golden days" for space research have passed away too? In my country the economic recession has led to dramatic rearrangements of national priorities with deleterious effects on the funding of scientific education and research. And again and again we benefit from international support and hope for the better future.

Finally, I am happy to remain the member of geophysical scientific community, this "invisible", but united family. I hope to meet the new challenges and opportunities with enthusiasm.

Solar Activity Forcing of the Middle Atmosphere Second Workshop IAGA/IAMAS

The Workshop was held in Prague in the Faculty of Mathematics and Physics of Charles University on 18-21 August 1997. The Workshop was attended by 58 scientists from four continents, 40 from abroad. Altogether 48 oral papers were presented, including 11 invited papers, and three posters. Many of them were accompanied by lively discussion. The papers presented at the Workshop will mostly be published in special issue of Annales Geophysicae and Studia Geophysica et Geodaetica. The social program included a concert, an excursion "Old Prague house signs", and a farewell party.

Selected scientific results:

1. Solar radiation, interplanetary space, high energy particles:
Long-term variations of the total solar irradiance will be much larger than the solar cycle effect, as it follows from comparison with sun-like stars (Lean). The solar cycle effect in the solar H Lyman-alpha line is of a factor of 1.6-2 (Lean, Prinz et al., Kazachevskaya et al.). The solar EUV radiation was very weak in 1995-97 (Kazachevskaya et al.). In the UV radiation near 205 nm, the 27-day period prolongs up to 29 days under solar activity minimum conditions, and shortens to ~26 days under solar activity maximum conditions (DeLand et al.). The Skalnate Pleso coronal index over 1939-96 is available at <http://www.ngdc.noaa.gov> (Dzifcakova). The videoanimation of SOHO measurements nicely illustrates development of CMEs and enables a better prediction of space weather (Schwenn). The pattern of Sun's motion around the barycentre of solar system seems to be the cause of long-term variations of solar activity (Charvatova). The galactic cosmic ray (GCR) proton flux is modulated by solar activity at energies up to a few GeV; the deepest ever observed Forbush decrease of CRs occurred in July 1991 (Fischer).

2. Solar cycle effect on temperature, geopotential heights, ozone
The effect of solar cycle on temperatures and geopotential heights in the stratosphere and upper troposphere is strongest (highest correlation) in summer at latitudes near 30N at the western hemisphere; this is, however, a global effect on the northern hemisphere, which may probably be attributed to modification of Hadley circulation (Labitzke and van Loon). Very similar although

somewhat weaker correlation with the solar cycle has been observed for the southern hemisphere; the maximum of correlation moves polewards from winter to summer at both hemispheres (van Loon and Labitzke). The above results including the role of QBO in winter were reasonably well reproduced by a model (Balachandran et al.), based on solar UV irradiance changes during solar cycle. The difference between the observed and modelled effect of solar cycle in ozone has not only chemical and radiative causes - dynamical ones seem to prevail (Shindell et al.). There is a pronounced solar cycle effect in the total ozone in winter over northern Europe, while this effect is almost absent over eastern Siberia probably due to different binding of ozone with dynamics in this region (Soukharev). Measurements of winds near 95 km at Collm provide in summer a weaker negative and in winter no effect of solar cycle; the amplitude of ~2-day wave increases with solar activity, planetary waves of longer periods are basically insensitive to solar cycle (Jacobi). Wind measurements from Kazan show that at 100-110 km there is practically no solar cycle effect, while it occurs at 80-100 km; the solar cycle effect on semiannual amplitude is maximum near 80 km, while on annual amplitude is maximum near 95 km (Berdunov and Fahrutdinova).

3. Geomagnetic storm and high energy particle effects on the middle atmosphere

Lastovicka showed that effects of geomagnetic storms on (i) F- region ionosphere, (ii) middle atmosphere and lower ionosphere, and (iii) troposphere are of different origin and mechanism. In eastern Siberia, effects of geomagnetic storms were found in winds at 80- 100 km and to a limited extent in total ozone (Kazimirovsky et al.). Mlch and Lastovicka found that laminae in ozone profiles were not affected by geomagnetic storms contrary to some effect in total ozone. A decrease of total ozone during Forbush-decreases of GCRs, which is realized mainly in the region near and above the tropopause, was observed by Fedulina. Krivolutsky et al. found during solar proton events a significant decrease of total ozone compared to to some increase at lower middle latitudes. During REP events, a substantial decrease of total ozone (~20 DU) was observed in Murmansk but no such effect was found in Leningrad (Roldugin et al.). De la Morena et al. indicated possible negative effect of strong solar flares on total ozone. Ermakov et al. found a linear instead of expected quadratic dependence between ion concentration and GCR flux at altitudes 7-30 km.

4. Lower ionosphere:

The electron concentration at 80 km increases from solar cycle minimum to maximum by a factor of 1-3.5 according to various authors, the most probable value being 1.5; the number of days of the excessive winter anomaly is lower under high solar activity conditions (Danilov). Rocket measurements show that the mesospheric electric field at polar and higher middle latitudes increases with geomagnetic activity; at 55 km, a simultaneous increase of conductivity has been observed (Zadorozhny and Tyutin). The huge Los Alamos ionospheric model reproduces quite well the development of electron concentration at various heights during solar flares (Ganguly and Zinn). Joint (spatially overlapping) observations of imaging riometer at Kilpisjaervi and EISCAT radar at Tromso show time differences in development of electron concentration at different altitudes in the lower ionosphere during the onset phase of substorms (Collis). After eliminating the solar cycle effect, Ulich et al. found a negative trend in riometric absorption (= mesospheric cooling) in northern Finland, and in hmF2 they found a negative trend for 27 stations while positive for 21 stations.

5. Troposphere:

Changes of total or ultraviolet irradiance cannot explain short-term correlations (events) of tropospheric processes with solar activity; a very promising mechanism is found in "electro-freezing" of supercooled water droplets in tops of clouds and in its changes with changes of intensity of galactic cosmic rays; this mechanism provides energy amplification by more than 11!! orders of magnitude (Tinsley). Bochnicek and Bucha demonstrated that during the eastern phase of QBO and low geomagnetic activity and/or the western phase of QBO and high geomagnetic activity, the Aleutian pressure low deepens; under opposite conditions, the Icelandic pressure low deepens. The atmospheric transparency shows a good negative correlation with solar cycle (Roldugin and Starkov). Dispersions of temperature above Siberia and northern America correlate rather poorly with solar cycle (Kishcha and Dmitrieva). The long-term trend of increasing temperature and decreasing precipitation at Hurbanovo (Slovakia) correlates with long-term increase of solar and geomagnetic activity (Prigancova). Stozhkov and Pokrevsky observed a decrease of precipitation in the day of maximum Forbush-decrease of GCRs, and on the contrary an increase of precipitation for strong SPEs, both in Russia and Brazil.

For more information contact Dr. Jan Lastovicka, jl@ufa.cas.cz.

Report to IAGA on IAGA/URSI Joint Working Group on VLF/ELF Remote Sensing of the Ionosphere and Magnetosphere (VERSIM) 1995-97

The working group serves as a forum for researchers studying the behaviour of the magnetosphere and ionosphere by means of ELF and VLF radio waves, both naturally and artificially generated. Originally the emphasis was on probing of the magnetosphere by whistlers, but recently the scope has become somewhat broader. The group aims to promote research in this field by facilitating the exchange of ideas, information and experience between active research workers and other interested scientists. This is done through regular meetings at URSI and IAGA Assemblies, via the circulation of a newsletter, and through the World-Wide-Web. The group has also been active in sponsoring scientific symposia at IAGA and URSI Assemblies, in areas relevant to its field of interest, and in coordinating observational campaigns. At present the main areas of interest are Plasma structures and boundaries - morphology and dynamics, Wave-particle and wave-wave interactions, Wave-induced precipitation, and Wave propagation in magnetospheres and ionospheres.

Meetings of the VERSIM group at Boulder in 1995 and at the 1996 URSI Assembly in Lille recommended that the working group continue in existence.

The Boulder meeting, held on 8 July 1995, was reported in VERSIM Newsletter No. 8. A proposal from D Nunn (UK) for a VERSIM-sponsored session at the 1997 Uppsala IAGA General Assembly on Localised ionospheric perturbations related to lightning and VLF transmitters was approved and later endorsed by IAGA Division 2 and the IAGA executive. It is session 2.14 and is scheduled for 0830-1200 on 11 August 1997 in room HSC1 (convenors D. Nunn and A.J. Smith). The meeting recommended that the working group remain in existence until at least 1999, and A.J. Smith was elected to serve as IAGA co-chairman for a further 4-year term.

The well-attended Lille meeting, held on 4 September 1996, was reported in VERSIM Newsletter No. 10. M. Parrot (France) was elected as URSI co-chairman of the working group, in place of U.S. Inan (USA) who was standing down after 12 years service. A session entitled "Pitch angle scattering and acceleration of trapped particles by waves in magnetospheres" was proposed for the next

(1999) URSI General Assembly in Toronto, the conveners to be A.J. Smith, J. Lemaire and U.S. Inan.

A successful VERSIM session was held at the Boulder IUGG General Assembly, on Whistler-Mode Waves and Particle Precipitation. A full report on this session was published in VERSIM Newsletter, No. 8.

A VERSIM business meeting will be held in Uppsala, at 1900 on Wednesday 6 August 1997 in room HSC A110. See VERSIM Newsletter No. 11 for details.

As a new initiative, a recent VERSIM bibliography has been compiled by M Parrot and is available on the VERSIM Web site.

The VERSIM mailing list has been updated and currently lists 97 scientists from 21 different countries (Australia, Belgium, Brazil, Canada, China, Czech Republic, Finland, France, Germany, Hungary, India, Japan, New Zealand, Norway, Russia, South Africa, Sweden, Ukraine, UK, USA, and Yugoslavia). There is an email directory on the VERSIM Web site.

Four newsletters (Nos. 8-11) have been issued since the 1995 IUGG Assembly in Boulder, USA.

The working group now has a regularly updated World-Wide-Web page at:
<http://www.nerc-bas.ac.uk/public/uasd/versim.html>.

A.J. Smith (IAGA Co-chairman of the VERSIM JWG)
16 July 1997

Nominations for IAGA Officers, 1999-2003

After the successful Uppsala meeting, IAGA is preparing for the next IUGG which is to be held in Birmingham in 1999. At this assembly, the terms of office of the present Executive Committee will conclude (except the Secretary-General, whose office expires in 2001) and new leaders should be elected or re-elected.

The Bye-Laws of IAGA require that at least six months before the opening of an Ordinary General Assembly, the President shall consult with the Executive Committee and appoint a Nominating Committee, consisting of a Chairman and four members. Members of the Executive Committee may not be appointed to the Nominating Committee. The Nominating Committee is required to present to the Conference of Delegates at least one candidate for each position of the Executive Committee, at least four days prior to the election.

The Chairman of the Nominating Committee has now been appointed, and all IAGA members are invited to offer suggestions for officers for the next quadrennium. The other members of the Nominating Committee will be appointed soon.

The Chairman is Professor Juan G Roederer, 105 Concordia Dr., Fairbanks AK 99709 USA. Tel: +1 907 474 5099
Fax: +1 907 474 5517; e-mail: jgr@geewiz.gi.alaska.edu

More information from the Statutes

The Executive Committee shall consist of the President, two Vice-Presidents, the Secretary General, five other Members, and the retiring President, *ex officio*. (They are listed inside the front cover.)

The President shall be elected for one period, and may not be re-elected to the same office. The Vice-Presidents shall be elected for one period and may be re-elected once. A retiring Vice-President may be elected President. The five additional Members shall be elected for one period and may be re-elected for successive single periods; they may not hold office for more than three consecutive periods. The retiring President is a member *ex officio* for only one period. With the exception of the election of the Secretary General, no person shall be eligible for election to any position on the IAGA Executive Committee who has served already on the Committee for four periods.

There are other ways, besides the Nominating Committee, that members may become candidates for election to the Executive Committee. This information is in the Statutes and Bye-Laws on our Web site, and will be published in the next IAGA News.

1998 International Geophysical Calendar

(The following is abridged for IAGA News from the information provided.)

This Calendar continues the series begun for the IGY years 1957-58, and is issued annually to recommend dates for solar and geophysical observations which cannot be carried out continuously. Thus, the amount of observational data in existence tends to be larger on Calendar days. The recommendations on data reduction and especially the flow of data to World Data Centers (WDCs) in many instances emphasize Calendar days. This 1998 Calendar has been drawn up by H.E. Coffey, of the International Space Environment Service (ISES) Steering Committee, and is published for the International Council of Scientific Unions and with financial assistance of UNESCO. The International Space Environment Service (ISES) is a permanent scientific service of the International Union of Radio Science (URSI), with the participation of the International Astronomical Union and the International Union Geodesy and Geophysics. ISES adheres to the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) of the International Council of Scientific Unions (ICSU). The ISES coordinates the international aspects of the world days program and rapid data interchange.

The calendar is available on-line at

<http://www.sec.noaa.gov/ises/ises.html>

Copies are available upon request from ISES Secretary for World Days, Miss H.E. Coffey, WDC-A for Solar-Terrestrial Physics, NOAA, E/GC2, 325 Broadway, Boulder, Colorado 80303, USA, FAX (303)497-6513, e-mail hcoffey@ngdc.noaa.gov.

Definitions:

Time = Universal Time (UT);

Regular Geophysical Days (RGD) = each Wednesday;

Regular World Days (RWD) = Tuesday, Wednesday and Thursday near the middle of the month (see calendar);

Priority Regular World Days (PRWD) = the Wednesday RWD;

Quarterly World Days (QWD) = PRWD in the WGI;

World Geophysical Intervals (WGI) = 14 consecutive days each season (see calendar);

ALERTS = occurrence of unusual solar or geophysical conditions, broadcast once daily soon after 0400 UT;

STRATWARM = stratospheric warmings

Retrospective World Intervals (RWI) = intervals selected by MONSEE for study.

Solar Eclipses :

(Description by Dr. Jay Pasachoff, Williams College,

jmp@williams.edu with input from Fred Espenak, NASA GSFC.

<http://umbra.gsfc.nasa.gov/eclipse/predictions/eclipse-paths.html>)

- a.) 26 February 1998 (total) eclipse, with totality visible in the Pacific Ocean from the Galapagos to Colombia and Panama, in Venezuela, in the islands of Aruba and Curacao, and across the Caribbean to Antigua, Montserrat, and Guadeloupe. Totality up to 4 min 8 s. Partial phases visible in U.S. southeast of a line drawn approx. from San Diego to Chicago and as far south as northern Chile, Bolivia, and northern half of Brazil. Partially eclipsed sunset seen from Portugal, north-western Spain, and West Africa; partially eclipsed sunrise seen from the east coast of the island of Hawaii.
- b.) 21-22 August 1998 (annular) eclipse, with annularity visible in parts of Sumatra, peninsular Malaysia, and northern Borneo. Partial phases visible in southern China, SE Asia, southern Japan, and extending to the south past Australia and New Zealand.

Days with significant meteor shower activity

(selected by R. Hawkes, Mount Allison University, Canada,

rhawkes@mta.ca). Includes important visual showers and also

unusual showers observable mainly by radio and radar techniques.)

Northern Hemisphere: 3-5 Jan; 21-23 Apr; 4-6 May; 6-11,

27-29 Jun; 11-14 Aug; 21-23 Oct; 16-19 Nov; 13-15, 22-24 Dec

1998; 3-5 Jan 1999.

Southern Hemisphere 4-6 May; 6-11, 27-29 Jun; 27 Jul-2 Aug;

21-23 Oct; 16-19 Nov; 13-15 Dec 1998.

Particular attention is drawn to the Leonid shower which is expected to produce storm conditions of thousands to tens of thousands of visual meteors per hour at approximately 17 UT +/- 4 hours on 17 Nov 1998.

+ Incoherent Scatter Coordinated Observations Days

starting at 1600 UT on the first day of the intervals indicated, and

ending at 1600 UT on the last day of the intervals:

20-21 Jan DATABASE; 23-27 Mar MLTCS/CADITS;

27-29 Apr WLS; 26-28 May POLITE; 23-24 Jun DATABASE;

18-19 Aug DATABASE; 21-25 Sep MLTCS/CADITS;

19-21 Oct WLS; 16-19 Nov POLITE; 8-9 Dec DATABASE

where CADITS/MLTCS – Coupling and Dynamics of the

Ionosphere-Thermosphere System/Mesosphere, Lower-

Thermosphere Coupling Study (Contacts are Casandra Fesen -

fesen@tides.dartmouth.edu; Roberta Johnson --
rjohnson@dexter.sprl.umich.edu);
DATABASE – Incoherent Scatter Database
(Anthony van Eyken – tony@eiscat.no);
POLITE = Plasmaspheric Observations of Light Ions in the Topside
Exosphere (Phillip Erickson – pje@hyperion.haystack.edu);
WLS = Wide-Latitude Substorm Dynamics
(John Foster – jcf@hyperion.haystack.edu).

There are priority recommended programs for measurements not
made continuously (in addition to unusual ALERT periods) for the
following phenomena. Details are available on the Official
Calendar.

Aurora and Airglow
Atmospheric Electricity
Geomagnetic Phenomena
Ionospheric Phenomena
Incoherent Scatter
Ionospheric Drifts
Traveling Ionosphere Disturbances
Ionospheric Absorption
Backscatter and Forward Scatter
Mesospheric D region electron densities.
ELF Noise Measurements of earth-ionosphere cavity resonances --
Meteorology
GAW (Global Atmosphere Watch)
Solar Phenomena
ISCS (International Solar Cycle Studies)
Space Research, Interplanetary Phenomena, Cosmic Rays,
Aeronomy.

International Geophysical Calendar 1998 (Final)

1998							1999						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
JANUARY							JULY						
	4	5	6	7	8	9	5	6	7	8	9	10	11
11	12	13	14	15	16	17	12	13	14	15	16	17	18
18	19	20+	21+	22	23	24	19	20	21	22*	23 ^N	24	25
25	26	27*	28*	29	30	31	26	27	28	29	30	31	1
FEBRUARY							AUGUST						
1	2	3	4	5	6	7	2	3	4	5	6	7	8
8	9	10	11	12	13	14	9	10	11	12	13	14	15
15	16	17	18	19	20	21	16	17	18+	19*	20*	21	22 ^N
22	23	24	25*	26*	27	28	23	24	25	26	27	28	29
MARCH							SEPTEMBER						
1	2	3	4	5	6	7	30	31	1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19
22	23+	24+	25*	26+	27+	28 ^N	20 ^N	21+	22*	23*	24+	25+	26
APRIL							OCTOBER						
29	30	31	1	2	3	4	27	28	29	30	1	2	3
5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22*	23*	24	25	18	19+	20 ^N	21*	22*	23	24
26 ^N	27+	28+	29*	30	1	2	25	26	27	28	29	30	31
MAY							NOVEMBER						
3	4	5	6	7	8	9	1	2	3	4	5	6	7
10	11	12	13	14	15	16	8	9	10	11	12	13	14
17	18	19	20*	21*	22	23	15	16+	17+	18*	19 ^N	20	21
24	25 ^N	26+	27+	28+	29	30	22	23	24	25	26	27	28
JUNE							DECEMBER						
31	1	2	3	4	5	6	29	30	1	2	3	4	5
7	8	9	10	11	12	13	6	7	8+	9*	10	11	12
14	15	16	17	18	19	20	13	14	15	16*	17*	18 ^N	19
21	22	23*	24*	25	26	27	20	21	22	23	24	25	26
28	29	30					27	28	29	30	31	1	2
S	M	T	W	T	F	S	3	4	5	6	7	8	9

- ⑬ Regular World Day (RWD)
- ⑱ Priority Regular World Day (PRWD)
- ⑭ Quarterly World Day (QWD)
also a PRWD and RWD
- ⑦ Regular Geophysical Day (RGD)
- ⑫ ⑬ World Geophysical Interval (WGI)
- 6+ Incoherent Scatter Coordinated Observation Day

- ^N New Moon
- ⑳ Day of Solar Eclipse
- ⑫ ⑬ Airglow and Aurora Period
- 27* Dark Moon Geophysical Day (DMGD)

International Association of Geomagnetism and Aeronomy (IAGA)

IAGA is one of the 7 Associations in the International Union of Geodesy and Geophysics (IUGG). The objectives of IAGA are:

- a) to promote studies of magnetism and aeronomy of the Earth and other bodies of the solar system, and of the interplanetary medium and its interaction with these bodies, where such studies have international interest;
- b) to encourage research in these subjects by individual countries, institutions or persons and to facilitate its international coordination;
- c) to provide an opportunity on an international basis for discussion and publication of the results of the researches; and
- d) to promote appropriate standardizations of observational programs, data acquisition systems, data analysis and publication.

IAGA holds an Ordinary General Assembly every 4 years in conjunction with each Ordinary General Assembly of IUGG. Between the General Assemblies, IAGA holds a Scientific Assembly, often meeting with one of the other Associations of IUGG. IAGA therefore meets every other year. The next Assembly is the 22nd IUGG General Assembly, 19-30 July 1999, in Birmingham, England.

IAGA has 3 types of publications:

- (i) **IAGA Bulletins**, which include the Program and Abstracts of the Assemblies; Geomagnetic Data and Indices; and special Data Summaries or Information Booklets.
- (ii) **IAGA News**, which contains items and announcements of general interest to the IAGA community and which is published annually.
- (iii) **IAGA Guides** or other manuals which document methods and standards of observation of geophysical phenomena.

The IAGA News is sent free of charge to all addresses on the IAGA mailing list and is available on request from the Secretary-General, who also maintains information on availability and price of other IAGA publications.

IAGA welcomes all scientists throughout the world to join in research in "Geomagnetism and Aeronomy". IAGA is subdivided into a number of Divisions and Commissions, many of which have working groups for the study of particular subjects in their general areas of interest. On occasion, these internal IAGA groups issue their own newsletters or circulars. At the IAGA Assemblies, the groups organize specialist symposia, invite scholarly reviews and receive contributed papers which present up-to-the-minute results of current research.

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