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Secretary-General, 1995-2001:

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Masaru Kono
President, 1995-1999

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*Bheir aon duine
triùir bhàrr an rathad.*

Lastword

Your new Secretary-General asked me to produce this issue of IAGA News and so here I am again. I offer my sincere congratulations to JoAnn on having been elected Secretary-General. There are now **five** Secretaries-General of IAGA around and between us all, we should be able to keep JoAnn on the straight and narrow. I am sure that she will carry forward the interests of IAGA with firmness, wisdom, compassion and understanding so that in future years I can claim that the best thing that I have ever done is to hand on to her. In her task, she will receive as much support and get as much pleasure as I did. Being Secretary-General for as nice a bunch as is the IAGA community really is a warming experience and I feel lucky to have had the opportunity.

And now yet another General Assembly has come and gone; this one was marked with a temporary separation of one of the Associations and some uncalled-for acerbity has been shown. The Secretary-General of IAPSO [Bob Stevenson] shared with several Secretaries-General worries that surfaced in the summer of 1994. These were that the Union's Programme Committee, imbued with the philosophy of Emile Coué, seemed to be too unconcerned about the amount of lecture theatre space at Colorado University earmarked for the scientific sessions of the Associations. He was unable to get this matter attended to in the time available and in consultation with the IAPSO Executive Committee the decision was made to hold the IAPSO Assembly in Honolulu. This, incidentally, cleared up the problem of session accommodation for the rest of the Associations by decreasing the total demand for lecture theatre accommodation. I am delighted to learn that Bob Stevenson's gamble paid off (and it was very much a personal gamble of his, for he had to make the arrangements and to switch the location of the IAPSO sessions ab initio with barely a year in hand); the IAPSO Assembly had a good attendance, the sessions were well supported, the atmosphere was a happy one, and I hear that there were few grumbles about the Assembly. What more can one ask?

For the record, I am told that 1139 of the Boulder registrants marked down IAGA as their principal interest but I cannot tell you what proportion that was of the total registration nor how the number was made up from different countries. We had only one registrant who was unable, for political reasons, to get to the Assembly and that is a good sign.

My page has run out: I wish you all the best for research in the coming years and recommend my successor to you, sincerely and without reservation.

M Gadsden

DRAFT MINUTES OF THE
CONFERENCE OF DELEGATES
3 July and 11 July 1995
Boulder (Colorado), USA

D J Williams, President

The Secretary-General confirmed that at least one-half of the number of accredited Chief Delegates [see page 8] were present and that, therefore, the Conference could proceed to discussion of the agenda [Statute 19].

1. Minutes of the previous Conference of Delegates.

The draft minutes have been published in IAGA News No.32, pages 3 to 6. Alldredge moved that these be accepted as a true and correct record, seconded by Kono; **passed**, nemine contradicente.

2. Matters arising from the Minutes and not covered in the following agenda items.

There were none.

3. Report by the Secretary-General for the years 1991-1995.

The Secretary-General began by thanking the Division and Commission Leaders for producing a full and comprehensive programme of sessions for this Assembly. He noted that the Secretary-General was sometimes given credit for the programme (and sometimes not) but the responsibility for the sessions and the sheer hard work of preparation was done by the Leaders, working with their convenors. He pointed out that the work was done willingly and effectively by volunteers and that the Association would fail in its principal aim of holding biennial Assemblies without this support.

The Secretary-General referred to his report for 1991-1993 to the previous Conference of Delegates in Buenos Aires [see pages 4 and 5 of IAGA News no.32].

The Secretary-General reported that the IAGA Bulletin series had continued to appear and the Association owes much to the efforts of Michel Menvielle and Annick Berthelie. Data up to the year 1988 was now available in Bulletin Series No.32; Bulletins No.40 [Dst for 1957-1986] and No.54 [DGRF1985 and IGRF1990] had been published. With ICSU support, three more publications were imminent: "Manual on Magnetic Measurements and Observatory Practice", "Manual on Magnetic Repeat Station" and "Observing Noctilucent Clouds".

Finally, and with great regret, the Secretary-General noted that in the last four years the Association had lost at least nine distinguished and active colleagues:

David Robert Bates (UK)
Oscar Buneman (USA)
Konstantin Gringauz (Russia)
Fred Jacka (Australia)
Peter Nozharov (Bulgaria)
Franklin E Roach (USA)
Karl Wienert (Germany)
Charles Willman (Estonia)
Dimitar Zidarov (Bulgaria)

The Delegates stood in silence in their memory.

4. Report of the Finance Committee.

The President called upon G Rostoker, Chairman of the Finance Committee, to present the report of the Committee [printed in full on page 9]. A motion to accept this report was proposed by Lowes, seconded by Vincent, and **passed** nemine contradicente.

5. Report of the Nominations Committee.

In the absence of the Chairman of the Committee, the President introduced the list of names proposed for the Executive Committee for the next period and thanked the members of the Nominating Committee (Gough, chairman, Ashour, Fraser, Nishida and Sucksdorff) for producing what seemed to him to be a well-balanced slate. He reminded Chief Delegates that they, and they alone, could now nominate extra names for the election. He noted that with the next meeting of the Conference of Delegates scheduled for Tuesday of the second week, additional nominations should be in the hands of the Secretary-General by no later than noon on Saturday. If additional nominations were made, the Secretary-General would distribute voting papers to the Chief Delegates on Monday for return by noon on Tuesday.

6. Amendments to Statute 7.

The National Committee of the United Kingdom [UK] had duly proposed the following addition to Statute No.7:

Notwithstanding the terms of Statute 7, the Secretary-General shall be elected at the General Assembly in 1995 for a term of 6 years in the case of a fresh appointment or for 2 years in the case of re-election.

The National Committee of Japan proposed an extension to this amendment so that the effect of the change proposed by the UK would be more clear. First, in the existing text of Statute 7, in place of

The Secretary General shall be elected for two periods and may be re-elected for successive single periods.

the following be substituted:

The Secretary General shall be elected for eight years and may be re-elected for successive four-year terms.

The National Committee of Japan further proposed a modification of the UK amendment, to read:

Notwithstanding the terms of Statute 7, the Secretary General shall be elected at the General Assembly in 1995 for a term of 6 years in case of a fresh appointment or for 2 years in the case of re-election. In the event that there is no Scientific Assembly during any one period, the Executive Committee shall co-opt a Secretary General to take up the duties from the date of retirement of the current Secretary General and this action shall be subject to ratification by the next Conference of Delegates.

The Secretary-General informed the Conference of Delegates that copies of the text of Statute 7 and of the two amendments had been sent three months ago with the agenda for the Conference of Delegates to all National Correspondents of IAGA and to accredited Chief Delegates.

After a brief discussion, the President asked for a show of hands from the Chief Delegates on whether the Japanese amendment should be accepted. He asked if there was any dissenting voice; there being none, he declared the Japanese amendment **passed** by due vote of the Conference of Delegates.

7. Report by the President.

This is printed as an appendix to these Minutes [pages 10-14].

8. Motion for the adjournment.

The President moved that the meeting be adjourned to the evening of Tuesday first, 11 July. This was **approved**.

9. IAGA Resolutions.

The text of the resolutions is shown on pages 15-24. Eltayeb, chairman of the Resolutions Committee, **proposed** all the resolutions; these were **seconded** individually as shown below:

- Resolution No.1 [page 15]: **seconded** by Ashour: **passed**, nemine contradicente.
- Resolution No.2 [page 16]: **seconded** by Lastovicka: **passed** by 12 votes to 9.
- Resolution No.3 [page 16]: **seconded** by Tarling: **passed** by 49 votes to 1.
- Resolution No.4 [page 17]: **seconded** by Gregori: **passed**, nemine contradicente.

- Resolution No.5 [page 18]: **seconded** by Vilas: **passed**, nemine contradicente.
- Resolution No.6 [page 19]: **seconded** by Rostoker: **passed**, nemine contradicente.
- Resolution No.7 [page 20]: **seconded** by Rostoker: **passed**, nemine contradicente.
- Resolution No.8 [page 21]: **seconded** by Hejda: **passed**, nemine contradicente.
- Resolution No.9 [page 22]: **seconded** by Coles: **passed**, nemine contradicente. [This resolution was later **adopted by the Union.**]
- Resolution No.10 [page 23]: **seconded** by Coles: **passed**, nemine contradicente.
- Resolution No.11 [page 24]: **seconded** by Gregori: **passed**, nemine contradicente.
- Resolution No.12 [page 24]: **seconded** by Orozco: **passed**, nemine contradicente.

10. Report by the Tellers.

The President announced that there had been no qualified additional nominations to the Executive Committee and that, therefore, there had been no need for a vote to be taken. Before proceeding to declaration of the result of the vote for the Executive Committee, the President recognised A G Jones (Canada). Jones stated that he was the Chief Delegate for Canada and that he made a nomination for membership of the Executive Committee which had been rejected by the President. The Secretary-General said that he had received a nomination signed by Duba which was a nomination from Working Group I-2. [A typed copy is reproduced on page 7.] The Secretary-General had replied that only accredited Chief Delegates were competent to make additional nominations to the Executive Committee. The nomination was later returned with a note added by Jones that he was the accredited Chief Delegate for Canada and therefore the nomination should be accepted. The Secretary-General had received no accreditation for Jones and immediately had asked the Secretary-General of the Union [G Balmino] as an urgent matter to check whether the Union had received accreditation of Jones as Chief Delegate to IAGA Conference of Delegates. Balmino replied that the Union had not. The President thereupon ruled ex officio that the nomination was not valid and that there was, therefore, no contest for election to the Executive Committee.

Jones challenged this ruling and asked that the Chief Delegates be polled by rollcall to decide whether the President's ruling should stand. A motion to overturn the ruling, **proposed** by Adam, **seconded** by Booker, was lost by 12 votes to 2 with 6 Chief Delegates absent.

The President then declared the slate of candidates for the Executive Committee **elected** without opposition.

0853, 8 Jul 95

Michael:
Working Group I-2 in its business meeting last evening
(7 July) nominated
Laust B. Pedersen
to stand for IAGA Executive Committee. Could you please put
his name forward?

(sgd) Al Duba
Outgoing Chairman
for
Alan Jones
In Coming Chairman WGI-2

No - I cannot: only accredited (National) Chief Delegates
may make nominations.
Sorry,
(sgd) Michael
8.vii.95

Michael - I am the Chief Delegate for Canada to IAGA. So please
re-accept this nomination for Pedersen to IAGA Executive.
(sgd) Alan G Jones

11. Any other competent business.

The President announced that the Executive Committee had given the IAGA Long-Service award to Veniamin Smirnov (Russia).

Fukushima asked whether there should not have been a formal resolution of thanks to the Local Organizing Committee; the President stated that at a Union General Assembly, this would be a resolution from the Union.

Ogunade referred to discussion by the Executive Committee of a letter he had written concerning registration fees at Assemblies [under Any Other Competent Business of the meeting in 1993; see page 21 of IAGA News No.32]. He wished to make clear that he had not intended this letter to be read as a request that Assembly registration fees be adjusted according to national origin of individual delegates. Ashour commented that the outlook for Union registration fees was for increase because there was now the suggestion that financial

obligations in future be shared equally between the Union and the host country.

Ashour also commented that the Secretary-General of the Union should request all member countries to advise the Union of the names of Chief Delegates of the Associations and that this should be done well in advance of the opening of the Assembly.

Hjelt announced that the chairman of the International Lithosphere Programme for the next five years was to be Alan Green. He, and Green, looked forward to a continuing active programme, with new proposal in the pipeline.

There being no further business, the President closed the meeting at 9.15pm with the comment that the Secretary-General was quickly approaching the end of twenty years on the Executive Committee, twelve of which had been as Secretary-General.

CHIEF DELEGATES

Australia	B J Fraser
Belgium	M Scherer (P C Simon)
China	Wen-Yao Xu (Chuan Yi-Ti)
Czech Republic	Pavel Hejda
Denmark	Eigil Friis-Christensen
Egypt	Attia Ashour
Finland	S-E Hjelt
Germany	A Best
Hungary	Antal Adam
New Zealand	Don McKnight
Poland	Magdalena Kadzialko-Hofmokl
Russia	V P Golovkov
South Africa	P R Sutcliffe
South Korea	B H Ahn
Sweden	G Gustafsson (C G Falthammar)
Taiwan	Yien-Nien Huang
United Kingdom	D A Tarling
USA	John Booker (Torrence Johnson)
Yugoslavia	Desanka M Sulic
Zimbabwe	Francis Podmore

REPORT OF THE FINANCE COMMITTEE

As specified by the Statutes of the Association, the Executive Committee (EC) set up a Finance Committee comprising Dr. Gordon Rostoker (Chairman; Edmonton, Canada), Dr. Michel Menvielle (Orsay, France) and Dr. Kalju Eerme (Tartumma, Estonia). They were tasked with examining the IAGA accounts for the four year period 1991-1994 and to report their findings to the Conference of the Delegates.

Information was provided to the Finance Committee by the Secretary General, Dr. Michael Gadsden, in the form of two separate summaries of income and expenditures for the four years. One of these represented the accounts in their official format, with the sums of money being given both in pounds sterling and U.S. dollars. The second summary had the form of working sheets for the years 1992-1994 inclusive in which the expenditures and sources of income given in pounds sterling were presented in considerably more detail. In this Finance Committee's ensuing evaluation, all figures will be given in U.S. dollars following the approach of the previous Finance Committee.

Income for the past four years amounted to \$ 114,521 (\$ 102,300 from IUGG, \$6,478 from sales of publications and \$ 5743 from bank interest). Other miscellaneous items of revenue were offset in general by expenditures for specific activities for which that revenue was received. In addition, the INTERMAGNET grant and certain contracts represent line items in which IAGA only serves to handle the money in a manner which involves no net profit or loss.

The IAGA Secretariat has managed the resources of the Association over the past four years in a manner which has allowed the organization to return to some reasonable level of financial health. [Here we note that the previous Finance Committee expressed great concern over the earlier depletion of IAGA resources in that expenditure had significantly exceeded income over the years 1987-1990.] The business of the Association over the period 1991-1994 was run for \$ 44,376 (\$11,731 for Secretariat

operating expenses excluding EC travel, and \$ 32,645 for publications, specifically IAGA News and certain Bulletins). Other expenditures by the Association relate to the costs associated with IAGA meetings and IAGA sponsored Symposia as well as EC travel. As a response to the financial problems that were apparent from the depleting Association resources over the 1987-1990 time frame, EC travel was limited and, in fact, no EC meeting was held in 1994. As a consequence of a more strict control on the expenditure side, the Association carried forward \$ 38,031 into the 1995 financial year.

The Finance Committee notes that the amount of bank interest accruing over the past four years is considerably smaller than that reported by the previous Finance Committee for the years 1987-1990. This is a consequence of the overall lowering of interest rates which has occurred during the past four years. The sums of interest which can be earned are quite significant and the money so obtained can be very useful in financing Association activities. The Finance Committee suggests that the Secretary General find means of investing Association resources in a way which ensures optimal security and yet yields the highest interest rate(s) available.


Gordon Rostoker

Kalju Eerme


Michel Menvielle

July 1995

IAGA Presidential Address to the Meeting of the Delegates

D. J. Williams
July 3, 1995
Boulder, Colorado

Welcome to another IUGG General Assembly--the 21st General Assembly being held here in Boulder, Colorado. We appear to have numerous stimulating IAGA scientific sessions to experience. Not only will IAGA scientists discuss their work with colleagues from around the world but there is also ample opportunity to talk with, to exchange views with, and to initiate collaborative studies with scientific colleagues from other IUGG Associations--one of the primary benefits of the IUGG General Assemblies.

As we begin this Scientific Assembly I wish to thank Prof. Juan Villas and his colleagues for organizing and conducting such a successful Scientific Assembly in Buenos Aires in 1993. They certainly continued the tradition of stimulating and productive IAGA Assemblies and set a good example for this meeting to follow.

Next I would like to thank the Nominating Committee for the hard work they invested in identifying a very good slate of nominations for the 1995-1999 term. The committee was chaired by Prof. D. Ian Gough and its members were Profs. Attia Ashour, Brian Fraser, Atsuhiko Nishida, and Christian Sucksdorf. Thank you all for a job well done.

Also thanks are due the Finance Committee for its inspection of and report on the state of IAGA finances; more on this topic later. The Finance Committee was chaired by Prof. Gordon Rostoker, and its members were Profs. Kaljui Eerme and Michel Menvielle. Again, thanks for a job well done.

This evening I will present a short status report on IAGA, IUGG, and the relations between the IUGG and the Associations. First let me present a report on IAGA activity. This information was provided by the Division chairs. I greatly appreciate and thank them for their timely and most useful input. Due to time and space limitations, I shall not be able to mention all the activities occurring in areas of IAGA interest over the past four years. I will present samples of this activity in order to give a sense of the wide variety of efforts being pursued by IAGA scientists. I apologize in advance if I have omitted your favorite topic(s), but time and space restrictions left little if any leeway.

Division I scientists participated in numerous meetings and workshops dealing with all four of their main topics of interest: theory of the Earth's magnetic field, electromagnetic induction, paleomagnetism, and rock magnetism. A new activity was developed to aid in the analysis and interpretation of data and in the testing of models and hypotheses. These were called mini-workshops and were dedicated to hands-on interpretation of field data. These small workshops, held in conjunction with larger meetings, were based on intensive examination of data sets distributed to participants some months earlier. A requirement for admission was the detailed examination of at least one of the data sets. Access to computing facilities, analysis and presentation software, and to the participants home computational facilities were made available. These mini-workshops have been quite successful, resulting in special issues of the Journal of Geomagnetism and Geoelectricity.

New scientific results from Division I include indications of extremely rapid field changes during geomagnetic polarity transitions, possible relationships between the nature of the non-dipole field and the preferred paths of transitional virtual geomagnetic dipoles, and analysis of paleomagnetic data suggesting the presence of a supercontinent in the late Precambrian era that was quite different from the now-familiar one of Pangaea.

Finally, many IAGA data bases for paleomagnetism and rock magnetism have been established and are described ably by Charles Barton in an upcoming issue of EOS.

Division II scientists have participated in a variety of new scientific thrusts. For example, data from the Upper Atmosphere Research Satellite have provided, for the first time a global view of upper atmospheric winds, a view showing that there is great variability in the global-scale winds, including the tides and planetary waves, in addition to the previously known smaller-scale variability associated with gravity waves. UARS has also been helping to clarify the complex chemical processes of the middle atmosphere, for example by giving indications that the currently understood chemistry may indeed be able to account for the observed ozone densities around the stratopause, in contrast to earlier modeling studies that found an "ozone deficit."

Further there has been great excitement about the recognition that electrical phenomena in the stratosphere and mesosphere above major electrical storms are quite common. Even though upward-going lightning has occasionally been reported for over a hundred years, the advent of sensitive video cameras that can detect subvisual phenomena has brought to light stratospheric "blue jets" and mesospheric "red sprites." A number of theories are being developed to explain those phenomena, and their possible significance for the electrodynamics and chemistry of the middle atmosphere are being explored.

There is increasing evidence that various types of long-term change can occur in the middle and upper atmosphere, and that significant anthropogenic change may have already occurred. The ozone hole is a well-known example, but evidence has come out that mesospheric water vapor may have been increasing and that the mesopause region may have been cooling, accounting for an increased frequency of noctilucent clouds, a lowering of the height of mesospheric sodium and electron-density layers, and a possible increase of exospheric hydrogen.

Over the past four years, Division III scientists have seen the International Solar-Terrestrial Program (ISTP) finally, and slowly, take shape. It began in late 1992 with the successful launch of the first flagship of this program, the GEOTAIL satellite, built by the Japanese Institute for Space and Astronautical Sciences. Still working exceptionally well, GEOTAIL has fulfilled the deep tail portion of its mission and has been lowered to its final orbital position of roughly 9 R_e perigee and 30 R_e apogee. GEOTAIL, together with the first of the ISTP ground arrays, the Canadian CANOPUS array, formed the beginnings of the ISTP program. In late 1994 they were joined by the NASA WIND satellite, placed in an orbit to measure solar wind properties in detail and thereby providing solar wind input to the magnetosphere. Scientific results from GEOTAIL in the Earth's distant magnetic tail regions include size and strength estimates of flux ropes, filamentary characteristics of the tail, non-convective behaviors of tail plasma, and acceleration of ionospheric atomic and molecular ions to several hundred keV in energy.

SAMPEX, a low altitude satellite launched by NASA, has returned new and novel data on radiation belts, cosmic rays, and energetic electrons. For example a component of the radiation belts consisting of anomalous cosmic rays has been discovered and is being studied. This and the many other new results emanating from the SAMPEX satellite provide yet more dramatic examples of the value of small, inexpensive satellites to the space physics community.

ASTRID, a small low altitude Swedish satellite, has returned the first data from instrumentation designed to image macro-scale regions of magnetospheric charged particles by measuring neutral atoms created in the charge-exchange process. Along these same lines there has been dramatic development in instrumentation to obtain global images of the magnetosphere and its component parts. It is possible that at some future IAGA meeting we will get to see global pictures of the magnetosphere. In this regard ASTRID has been an initial and a hopeful step.

Division IV scientists share the excitement of Division III scientists with launch of the WIND satellite. The new and sophisticated instruments are providing better-than-ever observations of solar wind plasma ion composition and charge-states, ion and electron phase space characteristics, and time variability. Similar improved data is being received on the interplanetary magnetic field, waves, and energetic solar particles—all these improvements required to better (or in many cases, to develop) our understanding of the generation and propagation of shocks in the interplanetary medium, and the stimulation and operation of acceleration processes from the sun to the heliopause.

Speaking of the heliopause, there remains a continuing anticipation (and excitement) as the constellation of Voyager and Pioneer spacecraft continue their journey towards the solar system boundary with the galactic-medium. You've seen the results from the spacecraft inferring heliopause positions ranging from many tens to less than 200 AU. In addition, researchers using data from these spacecraft, ingeniously have inferred properties of the local galactic medium from observations of hydrogen and helium pick-up ions. Here we have the first direct observation of local galactic properties that can be compared directly with the views of the astrophysicists!

Finally the launch and flight of the ESA Ulysses spacecraft thru the interplanetary medium, past Jupiter, thru the high latitude heliosphere, and over the poles of the sun has been (and continues to be) a highly exciting mission for Division IV scientists. For example, data obtained over the solar poles indicate that at the very least the high latitude connection to the galactic medium is more complex than envisioned earlier.

IAGA's Division V members have had a busy four years and have experienced the appearance of new systems and capabilities that will change the way we handle and disperse our data. First let me note that the INTERMAGNET network continues to grow with more than 50 observatories now participating in the program. Five geomagnetic information nodes (GIN) have been established to provide rapid and easy access to the data. The GINs are located in Edinburgh, Golden, Kyoto, Ottawa, and Paris. By taking advantage of and using contemporary technology, the INTERMAGNET program is succeeding in greatly improving the access to large magnetic field data sets and in this way greatly improving observatory science. This forward looking approach will improve the credibility of the observatory network in the eyes of those outside IAGA.

Division V organized a workshop on magnetic observatories held in September 1994. It was successful with problems being presented and discussed openly and cooperative efforts identified that will contribute to the raising of observational standards into the future.

Along this line, IAGA through Division V leadership (and in particular David Kerridge) has been encouraging, through Program Outreach, institutions in richer countries operating observatories to aid similar organizations in countries where support is at less than critical levels. This initiative has had some success but is limited by the limited resources available anywhere for geomagnetic observatories. Even were it more successful, Program Outreach was viewed only as a short-term fix to this problem. The long-term solution still requires follow-up discussions, proposals, and implementation by the world-wide observatory community. I believe that IAGA should remain at the forefront of this effort and become its primary standard bearer.

As far as applications of geomagnetic data go, the concept of space weather is having new life breathed into it. Recent examples of the need for space weather alerts, warnings, and forecasts include power outages, transformer damage, and satellite failures. Improved space environment data is available from the launch of two new NOAA geostationary weather satellites and from real-time solar wind data available from the WIND satellite. INTERMAGNET has under study the goal of providing near-real time magnetic data for use in operational space weather forecasting.

CONFERENCE OF DELEGATES
REPORTS

Through the leadership of Division V, IAGA continues to produce magnetic field models, catalogs, and guide books. The 1995 revision of the IGRF will be agreed to here in Boulder. An IAGA Catalog of Regional Magnetic Survey, Chart, and Model Descriptions, with entries for 82 countries, appeared in June 1995. Two guide books, The IAGA Guide for Magnetic Observatories by Jankowski and C. Sucksdorff and The IAGA Guide for Magnetic Repeat Station Surveys by L. Newitt, C. Barton, and J. Bitterly are due out this year.

That covers briefly a sample of the activities engaging IAGA scientists over the past four years. Let me now spend a few moments on the IUGG and its relation to IAGA and our sister Associations. As mentioned above, the IUGG consists of an eight-member Bureau and a fifteen-member Executive Committee (EC) made up of the Bureau and the seven Association Presidents. The EC met in Boulder in July 1994 and are meeting here again during this Assembly. These meetings have continued the very positive spirit of cooperation that was established in earlier EC meetings.

It was agreed (and finalized at this meeting) to transfer \$50K from the Bureau budget to the Associations. Following some adjustments to the algorithm devised to allocate funds to the Associations (agreed to by all the Associations), IAGA's new allocation for the 1995-1999 period will be \$116K---an increase of some \$8K. In addition each Association will receive a \$20 surcharge for each of its registrants at this Assembly. This will provide \$15K-\$20K for IAGA. This represents a significant improvement in our financial picture over the past four years.

The next IUGG EC has the following budget policy items to finalize during the 1995-1999 term: i) allocate funds to the Associations according to the algorithm mentioned above (this will result in a somewhat larger allocation for IAGA) and ii) settle on the transfer of an additional amount of funds from the Bureau to the Associations (this will shift the division of Bureau and Association funding further towards the historical values of 20-30 years ago, i.e., 60% to the Associations and 40% to the Bureau).

As noted above, the IUGG EC consists of fifteen members, eight Bureau members and the seven Association Presidents. The present EC agreed that the Associations should have a majority vote when policy and financial matters are considered. Consequently it has been proposed to the IUGG Council that the number of IUGG Bureau members be reduced by one and that the role of the Past-President be changed from a voting to a non-voting member, thereby providing the Associations a one vote majority on a thirteen member EC. (Note: at their meetings in Boulder, the Council has rejected by a very narrow margin the one-member reduction in the Bureau membership. However it approved the change in the role of the Past-President. The EC now is a fourteen member committee consisting of seven Bureau members (President, Vice-President, Secretary General, Treasurer, and three at-large members), and the seven Association Presidents.

I will finish this report with some brief comments on data availability and IAGA (IUGG) resources.

The enormous increase in data and data rates that our observations now provide, the tremendously expanded capability to store large data sets easily and efficiently, the ability to transfer data in numerous formats over electronic networks, and the dramatic capabilities provided by the services of internet (WWW, Netscape, etc.) have changed the way that data are handled and accessed. IAGA scientists are utilizing these evolving capabilities and are beginning to change (permanently, I believe) the ways that they process, store, and distribute data. **IAGA must remain in the forefront of this effort and should establish an active working group in this area responsible for exercising the internet capabilities on behalf of IAGA (e.g. establish an IAGA home page), guiding IAGA into this exploding field of data access and re-examining the role of World Data Centers in**

this new era of data availability and access. Simultaneously IAGA must fulfill its responsibilities to those who may not have access to these capabilities. This is a difficult challenge and one worthy of IAGA's best efforts.

Finally let's consider **resources.** On the surface our present financial picture looks much improved over that of four years ago. This is due mainly to i) the new IUGG allocations, ii) the surcharge expected from this Assembly, and iii) the holding of fewer IAGA Executive Committee meetings during the 1991-1995 term. This is a positive development but there are ominous signs on the horizon. You are all familiar with the cutbacks that are occurring in many nations in not only our areas of science but in all scientific areas. In this climate, I do not believe that funding for international organizations such as IUGG will go untouched and that budget reductions will occur in the future, possibly in the near future. To date I have seen no plans being developed as to how best to cope with budget reductions and still maintain the goals of the organization. **IAGA should begin serious discussions between the Executive Committee and the Division Chairs to identify ways of fulfilling IAGA's main responsibilities on a significantly reduced budget.** This is another difficult challenge and its solution is, I believe, critical to the continued existence of IAGA (and the IUGG).

It has been an honor and a privilege being your President these past four years. It has also been my good fortune to have been able to work with an exceptional Secretary General, Michael Gadsden, and a talented, dedicated Executive Committee; Vice-Presidents Masaru Kono and Juan Villas, members Ibrahim Eltayeb, Gaston Fischer, Giovanni Gregori, Oleg Troshichev, Robert Vincent, and Roger Gendrin (Ex Officio). I wish the new President and Executive Committee well and I look forward to seeing you in Uppsala, Sweden in 1997.

D. J. Williams

Résolution I

I'AIGA,

reconnaisant le succès des campagnes d'observations faites durant l'AIEE (Année Internationale pour l'Electrojet Equatorial), en collaboration des pays membres et avec le soutien notamment de l'ORSTOM, du CEA, du CNET/Télécom, du Ministère Français de la Coopération, de l'Université d'Abidjan, du PAIGH et,

constatant la contribution de l'AIEE à la compréhension des principes fondamentaux de l'électrodynamique dans l'environnement terrestre,

demande instamment que les programmes de recherche associés à ce projet soient maintenus ou étendus à d'autres sites de faible latitude dans les années à venir, et soient soutenus par les pays membres et des organismes concernés.

CEA: Commissariat à l'Energie Atomique

CETP: Centre des Environnements Terrestres et Planétaires

CNET: Centre National d'Etude des Télécommunications

AIEE: Année Internationale pour l'Electrojet Equatorial

ORSTOM: Institut Français de Recherche Scientifique pour le Développement en Coopération

PAIGH: Pan-American Institute of Geography and History

IAGA,

recognizing the success of observations made during the **IEEY** (International Equatorial Electrojet Year) project, 1991-1994, with the collaboration of member countries and support from ORSTOM, CEA, CETP, CNET/Telecom, French Ministry of Cooperation, University of Abidjan, PAIGH, and others, and

noting, IEEY's direct contribution to the basic understanding of electrodynamics in the Earth's environmental space,

urges that related geomagnetic and aeronomic research programmes be maintained or extended at low-latitude sites in the coming decades, with the continued support from member countries and sponsors concerned.

CEA	Atomic Energy Commission
CETP	Centre for Terrestrial and Planetary Environments
CNET	National Centre for Telecommunications Study
IEEY	International Equatorial Electrojet Year
ORSTOM	French Institute for the Development of Cooperation in Scientific Research
PAIGH	Pan-American Institute of Geography and History

Resolution 2

IAGA,

recognizing the fundamental need for better understanding of the solar-cycle variation of the middle atmosphere for accurate estimation of anthropogenic changes,

recommends that an increased commitment be made by national and international agencies to support an enhanced level of research into this problem.

l'AIGA,

reconnaissant l'importance fondamentale de mieux comprendre la variation de l'atmosphère moyenne associée au cycle solaire afin d'estimer précisément les changements d'origine anthropogéniques,

recommande que les agences nationales et internationales augmentent leurs engagements afin de permettre une montée en puissance de la recherche dans ce domaine.

Résolution 3

l'AIGA,

reconnaissant que les données sur les propriétés magnétiques des roches fournissent une base essentielle pour la recherche paléomagnétique et pour l'interprétation des anomalies magnétiques crustales et,

constatant l'existence de vastes quantités de données d'origine et de nature variées,

demande instamment la création d'une banque de donnée internationale pour le magnétisme des roches.

IAGA,

recognizing that rock magnetic property data provide an essential framework for Palaeomagnetic research and for the interpretation of crustal magnetic anomalies, and

noting that existing accumulations of data are large, diverse, and dispersed,

urges the establishment of an international database for rock magnetism.

Resolution 4

IAGA,

considering the rapid progress currently being made in retrieving and compiling existing low-level airborne and marine magnetic anomaly data over large continental and oceanic areas, and

noting the importance of magnetic anomaly data for geological and tectonic mapping of the Earth's crust,

urges the compilation and publication of a digital magnetic anomaly map and database of the entire world (land and sea).

I'AIGA,

considérant la progression rapide dans la mise en forme et la synthèse des données aéromagnétiques et magnétiques marines sur de vastes régions continentales et océaniques et,

constatant l'importance des données d'anomalies magnétiques pour la cartographie géologique et tectonique de la croûte terrestre,

demande instamment que soient réalisées la synthèse et la publication d'une carte d'anomalie magnétique numérique du monde entier (terres et mers) et de la base de donnée associée.

Résolution 5

I' AIGA,

reconnaissant l'importance des campagnes de terrain et des cartes pour décrire le champ magnétique à la surface de la Terre et,

considérant que ces cartes devraient être mises à jour au moins tout les 10 ans afin de prendre en compte la variation séculaire du champ géomagnétique,

encourage les agences concernées dans les différents pays à soutenir le travail de terrain et la production de nouvelles cartes pour l'époque 2000 apr.J.-C.

IAGA,

recognizing the importance of field-surveys and charts for describing the surface magnetic field of the Earth, and

noting that charts should be updated at least every 10 years to take into account the secular change of the geomagnetic field,

encourages the relevant agencies from different countries to continue to support field-survey work and the production of new charts for epoch 2000 AD.

Resolution 6

IAGA,

noting the need for the AE and Dst Indices by the international scientific community for studies of solar-terrestrial physics, and

recognizing the great contribution of World Data Center C2 for Geomagnetism, Kyoto in producing the Dst and AE Indices,

expresses deep appreciation for the work performed by this Data Center in producing the AE and Dst Indices, and

urges that priority be given to deriving a near-real time AE Index by accelerating the acquisition of Russian geomagnetic data through transmission by satellite.

I'AIGA,

constatant la nécessité pour la communauté scientifique internationale de disposer des indices AE et Dst pour les études en physique de la Terre et du soleil et,

reconnaissant l'apport considérable du Centre Mondiale de Données C2 en Géomagnétisme à Kyoto à la production des indices AE et Dst,

exprime sa profonde gratitude pour le travail réalisé sur ces indices par ce Centre de Données et,

demande instamment de favoriser l'acquisition des données géomagnétiques russes par transmission satellite afin de produire en priorité un indice AE en temps quasi-réel.

Résolution 7

I' AIGA,

constatant l'importance des données des quatre observatoires géomagnétiques russes, Dixon, Tixie Bay, Cap Chelyuskin et Cap Wellen, pour produire l'indice AE, qui joue un rôle important dans les études sur les environnements terrestre et solaire et,

réalisant que le retard actuel dans la production de l'indice AE provient de la difficulté de numériser les données analogiques et du manque de transmission rapide des données russes,

demande instamment aux agences russes responsables et aux organisations étrangères associées, de coopérer pour maintenir ces quatre observatoires, pour y installer des magnétomètres numériques et pour y améliorer la transmission des données.

IAGA,

noting the importance of data from the four Russian geomagnetic observatories, Dixon, Tixie Bay, Cape Chelyuskin, and Cape Wellen, in the derivation of the AE Index, which plays an important role in investigations of the solar-terrestrial environment, and

recognizing that the present delay in the derivation of the AE Index is caused by difficulties of digitization of analog data and the lack of rapid transmission of the Russian data,

urges the responsible Russian agencies and related organizations overseas to cooperate in the maintenance of the four observatories, installation of digital magnetometers at those observatories, and improvement of data transmission.

Resolution 8

IAGA,

recognizing the central role of geomagnetic observatory data in the study and applications of all geomagnetic phenomena, and

noting the great value of long, continuous runs of observatory data,

thanks the individuals, host institutions, and national funding agencies whose commitments contribute to the continuing operation of geomagnetic observatories world-wide, and

encourages them to maintain their efforts.

l'AIGA,

reconnaissant le rôle central joué par les données d'observatoires magnétiques pour l'étude et dans les applications de tous les phénomènes géomagnétiques et,

rappelant qu'il est très important de disposer de séries longues et continues de données d'observatoires,

remercie les personnels, les instituts dont dépendent les observatoires et les organismes nationaux de financement, pour leur engagement permanent qui contribue au fonctionnement ininterrompu des observatoires magnétiques à travers le monde et,

les encourage à maintenir leurs efforts.

Résolution 9

I'AIGA,

considérant la nécessité d'ajouter des observatoires magnétiques fond de mer afin d'améliorer les modèles de variation séculaire grâce à une couverture globale équilibrée et,

notant le coût élevé et le temps nécessaire pour développer un prototype d'observatoire magnétique fond de mer,

demande instamment le soutien de programmes de recherche ayant pour but de réaliser, d'installer et de faire fonctionner des observatoires magnétiques fond de mer.

IAGA,

considering the need to improve secular variation modelling by the addition of ocean-bottom magnetic observatories to obtain a balanced global coverage, and

noting the high cost and long time needed to develop an ocean-bottom magnetic observatory prototype,

urges support of research programs aimed at the design, deployment, and running of ocean-bottom magnetic observatories.

Resolution 10

IAGA,

noting the considerable interest in the effects of the Interplanetary Magnetic Field (IMF) on the geomagnetic field, and

noting recent advances in measurement and data transfer in near-real time,

encourages interested institutes to continue their work in the development of indices and similar parameters to describe IMF structure using ground-based and satellite measurements.

l'AIGA,

notant l'intérêt considérable des études des effets du Champ Magnétique Interplanétaire (CMI) sur le champ géomagnétique et,

constatant les progrès récents dans la mesure et le transfert de données en temps quasi-réel,

encourage les instituts intéressés à poursuivre leur travaux sur le développement d'indices et de paramètres similaires afin de décrire la structure du CMI en utilisant des mesures au sol et par satellite.

Résolution 11

I' AIGA,

constatant qu'il s'est écoulé 15 ans depuis la dernière mission de mesure magnétique vectorielle de haute précision à partir d'une orbite terrestre basse et,

reconnaisant que des mesures continues et précises du champ géomagnétique et de ses variations sont essentielles pour l'étude de la Terre,

demande instamment le soutien des missions en cours et la mise en oeuvre de nouveaux programmes de construction de satellites capables de mesurer précisément le champ géomagnétique vectoriel.

IAGA,

noting that 15 years have passed since the last high-accuracy vector geomagnetic survey from low-Earth orbit, and

recognizing that continued accurate measurements of the geomagnetic field and its variations with time are crucial for our understanding of the Earth,

urges the support of on-going missions and the initiation of new efforts to construct satellites capable of measuring accurately the vector geomagnetic field.

Resolution 12

IAGA,

noting the explosive increase in the amount of data in geomagnetism and solar-terrestrial physics, and

recognizing the fundamental importance of the construction of accessible databases,

urges further support for data centers to acquire the facilities and personnel necessary for efficient data exchange in this new situation.

I' AIGA,

constatant l'énorme accroissement de la quantité de données en géomagnétisme et en physique de la Terre et du soleil et,

reconnaisant qu'il est essentiel de disposer de banques de données accessibles,

demande instamment un soutien accru aux centres de données, notamment en matériels et en personnels, afin de leur permettre de faire face à cette nouvelle situation, en continuant d'améliorer l'efficacité des échanges de données.

EXECUTIVE COMMITTEE

Minutes (draft)

Boulder, Colorado, U.S.A.

1 July and 11 July 1995

Present D J Williams (President), M Kono and J F Vilas (VicePresidents), I A Eltayeb, G Fischer, G P Gregori, O Troshichev, R A Vincent and M Gadsden (Secretary-General). Apologies for absence were received from R E Gendrin who was unable to get away from his Antarctic work.

I Minutes of the previous meeting

The draft minutes of the previous meeting have been printed in IAGA News No.32, pages 13 to 22. The President **proposed** adoption of the minutes without change, **seconded** by Fischer, **passed** nemine contradicente.

II Matters arising from the minutes and not covered in the following agenda items

The President noted that in the last two years the use of the World Wide Web had expanded enormously and it was essential that IAGA established its presence on the Web. Vincent sounded a note of caution in that a good 'server' must be used and that access and outward transfer of information must take account of those around the world who are not connected to the Web. He pointed out that e-mail is not 100% effective, regional problems exist. The Executive Committee recommends that IAGA establish a 'home page'. Vincent noted that SCOSTEP (J H Allen, contact) would be holding a Solar-Terrestrial Physics Symposium during the first week, 4-8 August 1997, of the 8th Scientific Assembly in Uppsala (Sweden). He stated he was authorized to confirm that IAMAS would be joining IAGA in a Middle Atmosphere Symposium at the Assembly. The President confirmed that he had talked with the President of IAMAS and that the two Presidents were in agreement. It is not yet clear whether the Stratospheric Processes and their Role in Climate [SPARC] programme would wish to hold a meeting during the Assembly. Vincent asked whether a surcharge on the registration fee, similar to the \$20 earmarked for Association funds at the current Assembly, was planned for Uppsala. Eltayeb thought that there ought to be because, he felt, meetings of Associations would in future inevitably be seriously underfunded through the Union. Gregori said that the surcharge was a tax paid on scientific proceedings and was preferable to charging a fixed fee for each paper submitted. Kono remarked that this was perhaps something the new Executive Committee would decide.

With reference to Minute IV, the President reported that the Spanish translation of "Your Earth from the deep interior ... to outer space" was at proof correction stage and publication would be within the next few months. The Secretary-General noted that the print run of the English original was now completely exhausted and the Executive Committee **recommended** to the next Executive Committee that a reprint be considered. The pamphlet had proved to be very popular and had been used widely to inform people of the work and philosophy of IAGA.

III Report by the Secretary-General for the years 1993 and 1994

The Secretary-General summarized his report to be made to the Conference of Delegates [see pages 3 and 4]. The Association accounts for the years 1993 and 1994 had been sent to the Executive Committee with this agenda and are printed on pages 31 and 32.

IV Report by the President

(a) Sponsorship of meetings:

The Indian Institute of Geomagnetism asked for sponsorship of its Silver Jubilee symposium "Geomagnetism in Studies of Dynamics of Earth's Interior and Electrodynamics of its Far Environment"; **granted**.

The 4th Latin American Conference on Space Geophysics (IV COLAGE) was **granted** sponsorship, on condition that the organizers made effort to advertise the meeting widely in North America, Europe and Asia.

Stratospheric Processes and their Role in Climate [SPARC] is an international programme within the World Climate Research Program which was created in March 1992 and will hold its first General Assembly in Melbourne (Australia) on 2-6 December 1996. Sponsorship requested and **granted**.

(b) Review of Division and Commission structures and activities.

In reviewing the work of the Divisions and Commissions over the last four years the President referred to the relevant parts of his report to the Conference of Delegates [pages 11 to 13].

The Executive Committee had before it a letter from W Schroeder [Germany] to Fischer in which he proposed that the **History Commission** should be led by a Chairman and two CoChairmen to allow proper geographical coverage. The Executive Committee felt that there was no need to alter the proposed structure of this Commission.

(c) IAGA structure proposed for 1995-1999

This was received, reviewed, and accepted with satisfaction; it is clear that the Association's work and operations will be in very capable hands for the next four-year period. Eltayeb noted that although there was a full listing of the Chairmen and CoChairmen proposed for the Divisions and the Commissions,

it would help the Executive Committee to ensure proper geographical and disciplinary spread if the Working Group chairmen in each Division and Commission could also be listed. The Commission for Developing Countries had proposed two names for CoChairmen and the Executive Committee decided that there should be just one, in line with the Divisions and with the decision made in regard to Schroeder's letter (see above).

V Development of an IAGA policy anent funding at future Assemblies from the International Science Foundation

The President reviewed the current position having been at a similar discussion in the Union Executive Committee the day before. For information of those who were not aware of the basis of the Foundation, the ISF was established on the initiative, and using the personal funds, of George Soros. The funds were to be used to alleviate the problems for scientists from the "former-Soviet-Union" [fSU] getting travel funds to attend scientific meetings. There had been rumours early in the year about exhaustion of funds in the International Science Foundation [ISF]. Twenty-four IAGA scientists had been nominated, on the initiative of the Division Leaders through the Secretary-General, for the combined list submitted to the ISF from the Union secretariat. In March of 1995 (just four months before the opening of the Assembly), word had come through that there were no funds for support of travel to Boulder. The timing was such that it was impossible to reallocate the IAGA funds available for support of travel to the Assembly. The Secretary-General said that no-one had found this situation in any way to have been satisfactorily handled.

Troshichev noted that scientists from the fSU were, never mind what had happened this year, very grateful to Soros for the generosity he had shown in the last three years. Gregori said that indeed this matter had been handled in an unhappy way: he pointed out that awards of funds from the ISF were conditional upon the local organizers providing free registration for the grantees and this the US National Committee had refused. The Secretary-General said that, with the President's agreement, he had polled the Executive Committee by mail for their individual opinions but because time was short for a decision in the last few months' run-up to the Assembly he had had to allow only a very short reponse time. The balance of opinion returned in the time available was that IAGA should dig into its ultimate reserves to pay the 24 registration fees. In the event, this money was not called in.

Gregori said that he found this lacking in professional and personal dignity: he said there was an element of coercion in the arrangements in the sense that the rich were offering money to the poor but on condition that the poor found a proportion of the costs. He said that Society is cutting funds for science - and that perhaps Society is right to do this. But we should nevertheless continue to hold Assemblies.

The President agreed that the prime function of IAGA was to hold first class international meetings with a frequency that corresponded to the wishes of the IAGA community. Judging by the numbers of delegates that attended the IAGA Assemblies, these should continue to be held not less frequently than every two years.

Kono concluded the discussion by stating that IAGA's responsibility was to facilitate attendance of scientists at the IAGA Assemblies and that we had had no practical alternative but to pay the registration fees. If we had been made aware of the situation from much earlier on, a rational discussion could have been made. Dignity is good but we are trying to hold an effective meeting and we should make every effort to help needy scientists, from any country in the world, to get over barriers erected locally to hinder their travel.

VI Relations with other bodies

(a) IUGG

The President reported that the Union Executive Committee had recommended to the Finance Committee a change in the basis of funding the Associations to recover some of proportion of Union funds that had been moved away over the last ten years or so. The Finance Committee was not expected to resist this change. He also noted that it was hoped that the number of Union members on the Executive Committee would be reduced by one so that the Presidents (ex officio members of the Union Executive Committee) would have a majority in the voting. Vincent commented that he thought that the Union was currently operating independently of the Associations.

The Secretary-General informed the Executive Committee that he had recently received two letters from the Union VicePresident (P Wylie) anent "Administrative Structures" and "General Assembly: Open Forum on 'IUGG Future'". These were noted by the Executive Committee and tabled.

(b) Other ICSU bodies

There was a general discussion on the relations between IAGA, SCOSTEP, COSPAR and URSI. The four ICSU bodies share great areas of overlap in scientific study and there could be a case made for the formation, under ICSU, of a single Union to deal with geomagnetism and aeronomy : solar terrestrial physics : planetology and solar system: radio science. Because of the great overlap of individual membership, the sum would be a great less than the sum of the parts, while effectiveness would be enhanced by merging and the scientific value would become greater than the sum of the parts.

Vincent pointed out that SCOSTEP was a truly interUnion grouping to carry out specific and defined programmes. SCOSTEP covers both solar-terrestrial-physics [IAGA] and climate [IAMAS].

The President reminded the Executive Committee that the great restraint on all proposals was the availability of cash and

that the amount available was more likely to decrease than to increase in the next few years. He also reminded the Executive Committee that there is a strong solid Earth commitment in IAGA and that the Union provided a handy forum to meet with other Associations [particularly IAMAS, IASPEI, IAVCEI and IAG] and Committees [ILP, ELAS and SEDI].

VII Review of the status of the ground-based observatory programme

Kerridge, Chairman of Division V, came to the Executive Committee by invitation to report. He expressed himself "cautiously optimistic" for the continuation of groundbased observations particularly with the wide recognition that ground-based observations are needed with satellite observations to obtain representations of the geomagnetic field with correct assignments of internal and external contributions. He noted that INTERMAGNET had come to fruition and is not only operating very effectively but has raised the perception and profile of geomagnetic observations. There are 52 modern observatories in operation with good technical manuals. The aim, frequently achieved, is to obtain observations at 1-minute intervals for the entire year. On programme OUTREACH, he was able to report major progress and mother/daughter relations had been established across all seven continents. The geodetic network has led to opening up observations in India and he noted that a joint symposium [IASPEI/IAGA/IAG] on colocation of observatories dedicated to separate disciplines was being held at this Assembly.

He concluded by reporting that there was now a geomagnetic technical laboratory in Mexico that can supply Latin America with high-quality instruments at affordable prices. Problems remain with covering the costs of operation of high-latitude stations. The East German non-magnetic theodolite is now no longer in production.

The President welcomed this report and on behalf of the Executive Committee thanked Kerridge and asked him to let the Division V community know that their contributions to international cooperation were known and appreciated greatly by the community world-wide.

VIII Awards and long-service medals

(a) Proposed by Russian National Committee: **Veniamin Smirnov** for a long-service medal. Award was formally **proposed** by Vincent, **seconded** by Kono, and **passed** nemine contradicente.

(b) Proposed by Oleg Troshichev: **V Bobrov** for Honorary Membership of IAGA. Troshichev spoke of Bobrov's work on magnetic instruments and stations, saying that Bobrov had published more than 50 papers in this field. On the motion of Vincent, the Executive Committee **tabled** consideration of the proposal until a full, written citation was available.

IX Any other competent business

(a) The Secretary-General reported that he had been notified that a IAGA scientist from Yugoslavia wishing to attend the Assembly had been refused a visa by the US Government. He said that he would report this to the ICSU Standing Committee on Freedom in the Conduct of Science.

(b) Gregori noted that there had been a joint session on colocation of observatories and that there was also to be a Union meeting on "the network of IUGG observatories". He asked whether this meeting had been arranged on the initiative of an individual or as the result of a Union-wide effort with proper notification and consultation with relevant Associations. The President said that he understood the meeting was an informal gathering and Gregori added that it seemed to him to be a private meeting.

There being no other business, the President closed the meeting and said that he had greatly profited from presiding over the work of the Executive Committee and wished to express his personal thanks to all members of the Executive Committee, including Gendrin, his predecessor, detained by pressure of business from coming to Boulder; the President hoped that his successor, in turn, would have as cooperative, friendly, and active Executive Committee to preside over.

INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY
 Financial Report for the year 1993
 Amounts in US Dollars Exchange rate \$1.4990 = £1.000

RECEIPTS	IUGG	GRANTS & CONTRACTS	EXPENDITURES	IUGG	GRANTS & CONTRACTS
15 IUGG ALLOCATION	25700.00	x	11 ADMINISTRATION	3498.48	x
2 UNESCO GRANTS	x	x	12 PUBLICATIONS	1653.48	x
3 OTHER GRANTS	7708.38	14481.18	13 ASSEMBLIES	27037.42	8272.97
4 CONTRACTS WITH UNESCO, etc	x	x	14 SYMPOSIA & SCIENTIFIC MEETINGS	651.88	2077.98
5 SALES OF PUBLICATIONS	447.20	x	16 GRANTS (Permanent Services etc)	x	x
6 MISCELLANEOUS	2797.29	848.87	17 CONTRACTS WITH UNESCO etc	x	x
7 TOTAL RECEIPTS	36652.87	15330.05	18 MISCELLANEOUS	x	1110.94
8 CASH ON HAND AND IN BANKS Jan 1, 1993	208.80	x	19 TOTAL EXPENDITURE	32841.26	11461.89
9 INVESTMENTS & RESERVES Jan 1, 1993	7692.70	5025.17	20 CASH ON HAND AND IN BANKS Dec 31, 1993	2384.86	x
10 TOTAL	44554.37	20355.21	21 INVESTMENTS & RESERVES Dec 31, 1993	9328.25	8893.32
			22 TOTAL	44554.37	20355.21
23 ACCOUNTS RECEIVABLE	January 1, 1993		December 31, 1993		
24 ACCOUNTS PAYABLE	0.00		0.00		
	0.00		0.00		

INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY
 Financial Report for the year 1994
 Amounts in US Dollars Exchange rate \$1.4780 = £1.000

RECEIPTS	IUGG	GRANTS & CONTRACTS	EXPENDITURES	IUGG	GRANTS & CONTRACTS
15 IUGG ALLOCATION	25700.00	x	11 ADMINISTRATION	2191.52	x
2 UNESCO GRANTS	x	x	12 PUBLICATIONS	12197.59	x
3 OTHER GRANTS	2893.93	11705.87	13 ASSEMBLIES	388.24	x
4 CONTRACTS WITH UNESCO, etc	x	x	14 SYMPOSIA & SCIENTIFIC MEETINGS	1540.13	7467.16
5 SALES OF PUBLICATIONS	2798.67	x	16 GRANTS (Permanent Services etc)	x	x
6 MISCELLANEOUS	11407.47	x	17 CONTRACTS WITH UNESCO etc	x	x
			18 MISCELLANEOUS	x	10066.00
7 TOTAL RECEIPTS	42800.07	11705.87	19 TOTAL EXPENDITURE	16317.48	17533.16
8 CASH ON HAND AND IN BANKS			20 CASH ON HAND AND IN BANKS		
Jan 1, 1994	2351.42	x	Dec 31, 1994	6115.04	x
9 INVESTMENTS & RESERVES			21 INVESTMENTS & RESERVES		
Jan 1, 1994	9197.48	8768.65	Dec 31, 1994	31916.45	2941.36
10 TOTAL	54348.97	20474.52	22 TOTAL	54348.97	20474.52
23 ACCOUNTS RECEIVABLE	January 1, 1994		December 31, 1994		
	0.00			0.00	
24 ACCOUNTS PAYABLE	0.00			0.00	

IAGA STRUCTURE 1995-1999

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STATUTES

I. Objectives, Structure and Membership of the Association

1. The objectives of the International Association of Geomagnetism and Aeronomy (henceforth 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 the above 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 for publication of the results of the researches indicated above;
 - d) to promote appropriate standardizations of observational programs, data acquisition systems, data analysis and publication.
2. To achieve its objectives, the Association may establish any number of Component Bodies both within the Association and jointly with other Associations of IUGG or components of other ICSU Bodies.
3. The countries which adhere to the IUGG are members of the IAGA and may participate in its activities.
4. Each member Country shall be represented by a single body (henceforth referred to as IAGA National Body), established in that country by the body that adheres to the IUGG.

divisions

II. Administration

5. The work of the Association shall be directed by the Conference of Delegates.

The Conference of Delegates shall consist of the Delegates of the Member Countries, such accreditation having been communicated to the Secretary General prior to the start of the Assembly by the respective IAGA National Bodies. Among the Delegates from each Member Country, one shall be identified by the respective IAGA National Body as Chief Delegate for the purpose of casting that country's votes on administrative and financial matters as stipulated in Articles 14 and 15 of these Statutes.

A Delegate may represent only one Member Country. A member of the Executive Committee (see Article 7) may not be Chief Delegate, except in the case where that member is the only one person in attendance from the country in question.

A Conference of Delegates shall be convened during each Assembly of IAGA. An ordinary General Assembly of IAGA shall normally be held in connection with each ordinary General Assembly of IUGG.

The interval elapsing between the end of one ordinary General Assembly and the end of the next one will, for the purposes of the Statutes, be termed one period.

6. Responsibility for the direction of IAGA affairs between meetings of the Conference of Delegates shall be vested in the Executive Committee of the Association elected by the Conference of Delegates. Decisions of the Executive Committee must be reported to the Conference of Delegates. Any decision or recommendation failing to receive the concurrence of the Conference of Delegates may be remitted to the Executive Committee for further study.
7. The Executive Committee shall consist of the President, two Vice-Presidents, the Secretary General, five other Members, and the retiring President, ex officio.
Except for the retiring President all members of the Executive Committee shall be elected by the Conference of Delegates as an administrative matter as stipulated in Article 14 of the Statutes.
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 Secretary General shall be elected for eight years and may be re-elected for successive four-year terms. 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.
In the event of any vacancy occurring in the membership of the Executive Committee during one period, the Executive Committee shall have the power to fill the vacancy by appointment, until the end of the period. The eligibility for election of a person so appointed shall not be affected by such an appointment. If the vacancy is that of the Presidency, the Executive Committee shall appoint one of the two Vice-Presidents to act as President until the end of the period.
Notwithstanding the terms of Statute 7, the Secretary General shall be elected at the General Assembly in 1995 for a term of six years in the case of a fresh appointment or for two years in the case of re-election. In the event there is no Scientific Assembly during any one period, the Executive Committee shall co-opt a Secretary General to take up the duties from the date of retirement of the current Secretary General and this action shall be subjected to ratification by the next Conference of Delegates.
8. The duties of the Executive Committee shall be to administer the affairs of the Association in accordance with these Statutes and By-Laws and with the decisions of the Conference of Delegates.
The Executive Committee shall meet at the beginning and end of an Assembly and at least once more between ordinary General Assemblies.
9. The duties of the Component Bodies within IAGA (see Article 2 of the Statutes) shall be to further the scientific objectives of the IAGA through:
 - a) effective coordination of appropriate scientific researches;
 - b) organizing scientific meetings;
 - c) promoting the exchange of information and data; and

- d) advising the Executive Committee on the formulation of general policies to guide the scientific work of the Association.
10. The duties of the Bodies that are established jointly with other Associations of IUGG or components of other ICSU bodies (see Article 2 of the Statutes) shall be to deal with, and coordinate, those scientific programs and/or meetings that cover topics of mutual interest.

III. Finance

11. The Secretary General shall prepare, for each period, a budget estimate of receipts and expenditures during that period. The Secretary General shall lay this before the Executive Committee during the General Assembly immediately preceding that period and, having received the approval of the Conference of Delegates, may proceed with the disbursement of funds in accordance with that approved budget.
12. At least six months before the opening of an Ordinary Assembly, a Finance Committee shall be appointed by the Executive Committee to examine the accounts and to report the results of their examination to the Conference of Delegates. No Executive Committee member may at the same time be a member of the Finance Committee.

IV. Voting

13. When a vote is taken on a question ^{may be many} which is by nature exclusively scientific, each duly accredited Delegate present at a meeting of the Conference of Delegates shall have one vote.
14. On questions of an administrative nature the voting shall be by Member Countries, each Member Country having one vote cast by its Chief Delegate, (or that person's representative in accordance with the By-Laws).
15. On questions of a financial nature, the voting shall be by Member Countries, each Member Country having a number of votes equal to the number of its category of membership in IUGG. Such votes shall be cast by the Chief Delegate of each Member Country (or that person's representative in accordance with the By-Laws).
16. Matters which are partly scientific and partly administrative in character and not involving matters of finance shall be classified as administrative matters.
17. Before a vote, the President shall decide whether the matter under consideration is scientific, administrative or financial in character. The President's ruling can be challenged only by the Chief Delegate of a Member Country. In the event of such a challenge, the President's ruling can be changed by a two thirds majority of the Chief Delegates present.

18. Voting on matters of an administrative or financial nature may be conducted by correspondence (in accordance with the By-Laws).
19. For the validity of the deliberations of the Conference of Delegates, half at least of the accredited Chief Delegates must be present (or represented in accordance with the By-Laws).
Decisions of the Conference of Delegates shall be taken by a simple majority except as otherwise specified in the present Statutes. If a tie should occur, the decision shall rest with the President. Simple or two thirds majority shall be determined by the proportion of affirmative votes to the sum of the affirmative and negative votes.

ie. no weight to abstentions

V. General

20. These Statutes or any further modifications thereof shall come into force at the close of the General Assembly at which they are adopted, or as otherwise decided by the Conference of Delegates.
- attend?* 21. These Statutes may not be modified except with the approval of at least a two thirds majority of Member Countries who have accredited Delegates to the Assembly, in accordance with Articles 5 and 14 of the Statutes.
22. Only Member Countries may propose a change of these Statutes. Any such proposal must reach the Secretary General at least six months before the announced date of the General Assembly at which they are to be considered. The Secretary General shall notify all Member Countries of any proposed change, at least four months before the announced date of the General Assembly.
23. The Conference of Delegates shall have the power to adopt By-Laws within the framework of the Statutes of the Association. These By-Laws are adopted or may be modified by a simple majority of Member Countries who have accredited Delegates to the Assembly, in accordance with Articles 5 and 14 of the Statutes. By-Laws or any further modification thereof, shall come into force at the close of the General Assembly at which they are approved unless otherwise decided by the Conference of Delegates.
24. The present Statutes have been prepared in the official languages of the IUGG. The English text shall be authoritative if there is a question of interpretation.

BY-LAWS

I. Composition

1. The Components of IAGA shall be called Divisions and Interdivisional Commissions as follows:
 - Division I : Internal Magnetic Fields
 - Division II : Aeronomic Phenomena
 - Division III: Magnetospheric Phenomena
 - Division IV : Solar Wind and Interplanetary Magnetic Field

Division V : Observatories, Instruments, Surveys and Analyses
 Interdivisional Commission: History
 Interdivisional Commission: Developing Countries

2. Each Division or Interdivisional Body shall propose to the Executive Committee its own role, structure and modus operandi, which must be approved by the Executive Committee. The role and the effectiveness of each Division and Interdivisional Body shall be reviewed by the Executive Committee at each ordinary General Assembly.
3. The leaders for each Division and Interdivisional Commission and Interdivisional Working Group shall be appointed by the Executive Committee for one period, subject to ratification by the Conference of Delegates. Vacancies occurring in the interim shall be filled by the Executive Committee.
 In order that their appointments shall become effective, Division and Interdivisional Body leaders must express in writing to the President their willingness to serve in the functions specified.
4. The leaders of Divisions and Interdivisional Bodies are empowered to appoint for each period reporters, working group leaders, and the leaders of other possible subdivisions.
5. While it is recognized that the prime criteria for the appointments in Articles 3 and 4 of these By-Laws should be the scientific and administrative competence of the candidates, Executive Committee and Division and Interdivisional Body leaders shall see that, wherever possible, these appointments are made with due respect to adequate geographical representation.
6. The Executive Committee may create Joint Bodies with other IUGG Associations and components of other ICSU Bodies to deal with topics of mutual interest and carries out the responsibilities of IAGA in the appointment of the appropriate leaders, members of IAGA representatives, as is required.
 In its dealings with non-IUGG Bodies, the Executive Committee shall not commit the name of the IUGG, or act on behalf of the IUGG, unless prior approval has been secured from the IUGG Executive Committee.

II. Administration

7. The President may at any time, with the approval of the Executive Committee, call an extraordinary General Assembly.
 The President shall be obliged to call such an Assembly at the request of not less than one-half of the Member Countries.
 An extraordinary General Assembly shall have the same powers and be subjected to the same rules as an ordinary General Assembly.
 Between ordinary General Assemblies of IAGA, Scientific Assemblies may be held in accordance with IUGG By-Laws.
8. Notice of the date and of the place of the meeting of any Assembly shall be sent by the Secretary General to the Member Countries at least nine months before that Assembly.

9. The provisional agenda of the meetings of the Conference of Delegates shall be prepared by the Secretary General and circulated to IAGA National Bodies at least three months before the opening of an Assembly. The provisional agenda shall include all items which have been submitted by IAGA National Bodies for discussion at the Conference of Delegates, together with questions placed on the provisional agenda by the Executive Committee. Any item of which notice has not thus been given may only be discussed with the consent of the Conference of Delegates.
10. The meeting of the Conference of Delegates shall be open to the public. Any non-delegate may be heard in a discussion provided that person has been previously recognized by the President.
The President may, on his own initiative or at the request of a National Body, invite representatives of scientific bodies or individuals to attend a meeting of the Conference of Delegates in an advisory capacity.
11. A Member Country which is not represented at a meeting of the Conference of Delegates may vote by correspondence on any specific question of the type indicated in Articles 14 and 15 of the Statutes, with the exception of the election in the Executive Committee, provided that the question has been clearly defined in the final agenda distributed in advance to the Member Countries, provided that the substance of the question has not been changed and provided that the said vote has been received by the Secretary General prior to the meeting.
Before a vote, the President shall decide whether the procedure of voting by correspondence applies. The President's ruling may be challenged as prescribed in Statute 17.
12. A Chief Delegate of a Member Country may designate another delegate from the country to be his representative at all or part of a meeting of the Conference of Delegates or, if he is unable to do this, the duly accredited Delegates from that Member Country may designate one of their members to be such a representative of the Chief Delegate. In either case, the Secretary General shall be informed prior to the meeting of the Conference of Delegates at which the representative of the Chief Delegate is to act.
13. At least six months before the opening of an Ordinary General Assembly, the President in consultation with the Executive Committee shall 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.
Besides the proposals of the Nominating Committee, a Chief Delegate may make other nominations in writing to the Chairman of the Nominating Committee, at least two days prior to the election. The combined list of candidates must be made public at least one day prior to the election.
In general, the composition of the Executive Committee should reflect an adequate geographical and disciplinary balance.

The election of officers shall be by secret ballot. The President shall select two scrutineers from among the Delegates present. The scrutineers shall not be members of the Executive Committee nor of the Nominating Committee nor candidates for elections.

14. The Executive Committee shall be convened by the President. At a meeting of the Executive Committee, no member can be represented by another person. For the validity of the deliberations of the Executive Committee, at least half of its members must be present. All decisions of the Executive Committee shall be taken by simple majority of the total number of voting members present. In the case of a tie, the decision shall rest with the President. When the importance and the urgency of a decision warrant it, a vote by correspondence may be organized by the Secretary General at the request of the President. It is subject to the same rules for validity and majority. The President may, on his own initiative or at the request of another member of the Executive Committee or of an IAGA National Body, invite representatives of scientific bodies or individuals to attend an Executive Committee meeting in an advisory capacity.
15. Proposals concerning the agenda for meetings of the Executive Committee may be submitted by members of that Committee, by Division or Interdivisional Body leaders, or by IAGA National Bodies; they shall be in the hands of the Secretary General at least three months before the meeting. The final agenda after its approval by the President shall be distributed to the members of the Executive Committee at least one month prior to the meeting. Questions that have not been placed on the agenda may not be discussed at a meeting of the Executive Committee, unless a request to that effect has been approved by the Executive Committee.
16. In addition to the duties specified in Articles 6 and 8 of the IAGA Statutes and Articles 2, 3 and 6 of these By-Laws, and subject to general or special directives of the Conference of Delegates, the Executive Committee shall have the power to:
- a) act as the organizing committee for all IAGA Assemblies, Symposia and Meetings, or delegate such responsibility to other persons by making the necessary appointments.
 - b) entrust to special commissions or to particular individuals the preparation of reports on subjects within the province of the Association;
 - c) invite or appoint persons or institutions belonging to countries which are not members of the Association, to be local correspondents to the Association.
17. The duties of the President of the IAGA are:
- a) to represent IAGA in the IUGG Executive Committee;
 - b) to represent IAGA in its dealings with IAGA National Bodies, the other IUGG Associations and other ICSU Bodies;
 - c) to represent or to appoint a person to represent IAGA at meetings, conferences or celebrations where formal representation is requested or desirable;
 - d) to convene the Conference of Delegates and the meetings of the Executive Committee and to preside over their meetings; and

- e) to submit a report to the ordinary Conference of Delegates at each General Assembly on the scientific work of the Association.
18. The duties of the Vice-President, one or the other as shall be determined by the Executive Committee, are to preside at Conferences of Delegates or Executive Committee meetings in case of imperiment to the President, and to represent the President in such an event at IUGG Executive Committee Meetings, as specified in Article 11, paragraph 2, of the IUGG By-Laws. The President may designate one of the Vice-Presidents to act on his behalf in any other function, meeting or conference in which formal representation of IAGA is requested or desirable.
19. The duties of the Secretary General are:
- a) to serve as secretary of the IAGA, to organize the Assemblies according to the instructions of the Executive Committee, to arrange for the meetings of the Executive Committee, to prepare and distribute promptly the agenda and the minutes of the meetings of the Conference of Delegates and of the Executive Committee;
 - b) to manage the administrative and scientific affairs of the Association, to attend to correspondence, to main and preserve the records;
 - c) to inform members of the Executive Committee, during the interval between its meetings, about any important affair concerning the Association;
 - d) to advise the President during the meetings of the IUGG Executive Committee;
 - e) to receive and keep charge of such funds as may be allocated by the IUGG to the Association, or as may be received from any other source, to disburse such funds in accordance with the decisions of the Conference of Delegates or with the instructions of the Executive Committee, to keep the account of all receipts and disbursements and to submit such account, audited by a qualified accountant, for examination by the Finance Committee appointed according to Article 12 of the IAGA Statutes;
 - f) to prepare and publish the program and transactions of the General Assembly;
 - g) to publish an internal Association bulletin (such as IAGA News) containing all information of general interest to the Association;
 - h) to prepare for each Assembly the list of the Delegates and Chief Delegates; and
 - i) to perform such other duties as may be assigned by the President or by the Executive Committee.

III. Finances

20. In the estimation of expenditures by the Secretary General and approval thereof by the Executive Committee, mentioned in Article 11 of the IAGA Statutes, provision shall be made to allocate the expected funds to the following items listed in order a), b), c) of decreasing priority:
- a) Operation of the Secretariat of the Association, including the administrative arrangements in preparation for Assemblies and Executive Committee meetings, the publication of IAGA News and IAGA Transactions, and the travel expenses incurred in the

representation of IAGA at IUGG Executive Committee meetings. Meetings of the Executive Committee during Assemblies, including travel expenses for the Executive Committee members who cannot otherwise obtain support. Minor administrative expenses requested by those leaders of Joint Bodies, Divisions and Interdivisional Bodies who have expressed in writing that they were unable to obtain the necessary support from the IAGA National Body, if any, of their country, and from their home institution.

b) Meetings of the Executive Committee that are to take place between Assemblies, including travel expenses for the Executive Committee members. Partial travel expenses to official administrative or IAGA-sponsored scientific meetings for those leaders of Divisions, Interdivisional Bodies and Joint Bodies, and those invited speakers, conveners, or program committee members, whose participation is judged by the Executive Committee to be essential for the success of the meeting and who have expressed in writing that they were unable to obtain the necessary support from their home institutions. Travel expenses for the President to attend functions as the representative of IAGA. Assistance as necessary with the regular publication of the international series of Geomagnetic Indices for which IAGA has primary responsibility.

c) Special publications, special administrative expenses, or any other item not mentioned in a) and b) above which is in accordance with the objectives of the Association.

International Geophysical Calendar 1996 (Final)

(See other side for information on use of this calendar)

	S	M	T	W	T	F	S		S	M	T	W	T	F	S	
JANUARY		1	2	3	4	5	6			1	2	3	4	5	6	JULY
	7	8	9	10	11	12	13		7	8	9	10	11	12	13	
	14	15	16	17	18	19	20		14	15	16	17	18	19	20	
	21	22+	23+	24+	25	26	27		21	22	23	24	25	26	27	
	28	29	30	31	1	2	3		28	29	30	31	1	2	3	AUGUST
FEBRUARY	4	5	6	7	8	9	10		4	5	6	7	8	9	10	
	11	12	13+	14+	15	16	17		11	12	13+	14+	15	16	17	
	18	19	20	21	22	23	24		18	19	20	21	22	23	24	
	25	26	27	28	29	1	2		25	26	27	28	29	30	31	
MARCH	3	4	5	6	7	8	9		1	2	3	4	5	6	7	SEPTEMBER
	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	20	21	
	24	25	26	27	28	29	30		22	23	24	25	26	27	28	
APRIL	31	1	2	3	4	5	6		29	30	1	2	3	4	5	OCTOBER
	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	19	
	21	22	23	24	25	26	27		20	21	22	23	24	25	26	
	28	29	30	1	2	3	4		27	28	29	30	31	1	2	NOVEMBER
MAY	5	6	7	8	9	10	11		3	4	5	6	7	8	9	
	12	13	14+	15+	16	17	18		10	11+	12+	13+	14+	15	16	
	19	20	21	22	23	24	25		17	18	19	20	21	22	23	
	26	27	28	29	30	31	1		24	25	26	27	28	29	30	
JUNE	2	3	4	5	6	7	8		1	2	3	4	5	6	7	DECEMBER
	9	10	11	12	13	14	15		8	9	10	11	12	13	14	
	16	17	18	19	20	21	22		15	16	17	18	19	20	21	
	23	24	25	26	27	28	29		22	23	24	25	26	27	28	
	30								29	30	31	1	2	3	4	1997
	S	M	T	W	T	F	S		5	6+	7+	8+	9+	10+	11	JANUARY
									12	13	14*	15*	16	17	18	
									19	20	21	22	23	24	25	
									26	27	28	29	30	31		
									S	M	T	W	T	F	S	

⑩ Regular World Day (RWD)

⑪ Priority Regular World Day (PRWD)

⑫ Quarterly World Day (QWD)
also a PRWD and RWD

⑬ Regular Geophysical Day (RGD)

⑭ ⑮ World Geophysical Interval (WGI)

⑯+ Incoherent Scatter Coordinated Observation Day

⑰ Day of Solar Eclipse

⑱ ⑲ Airglow and Aurora Period

⑳* Dark Moon Geophysical Day (DMGD)

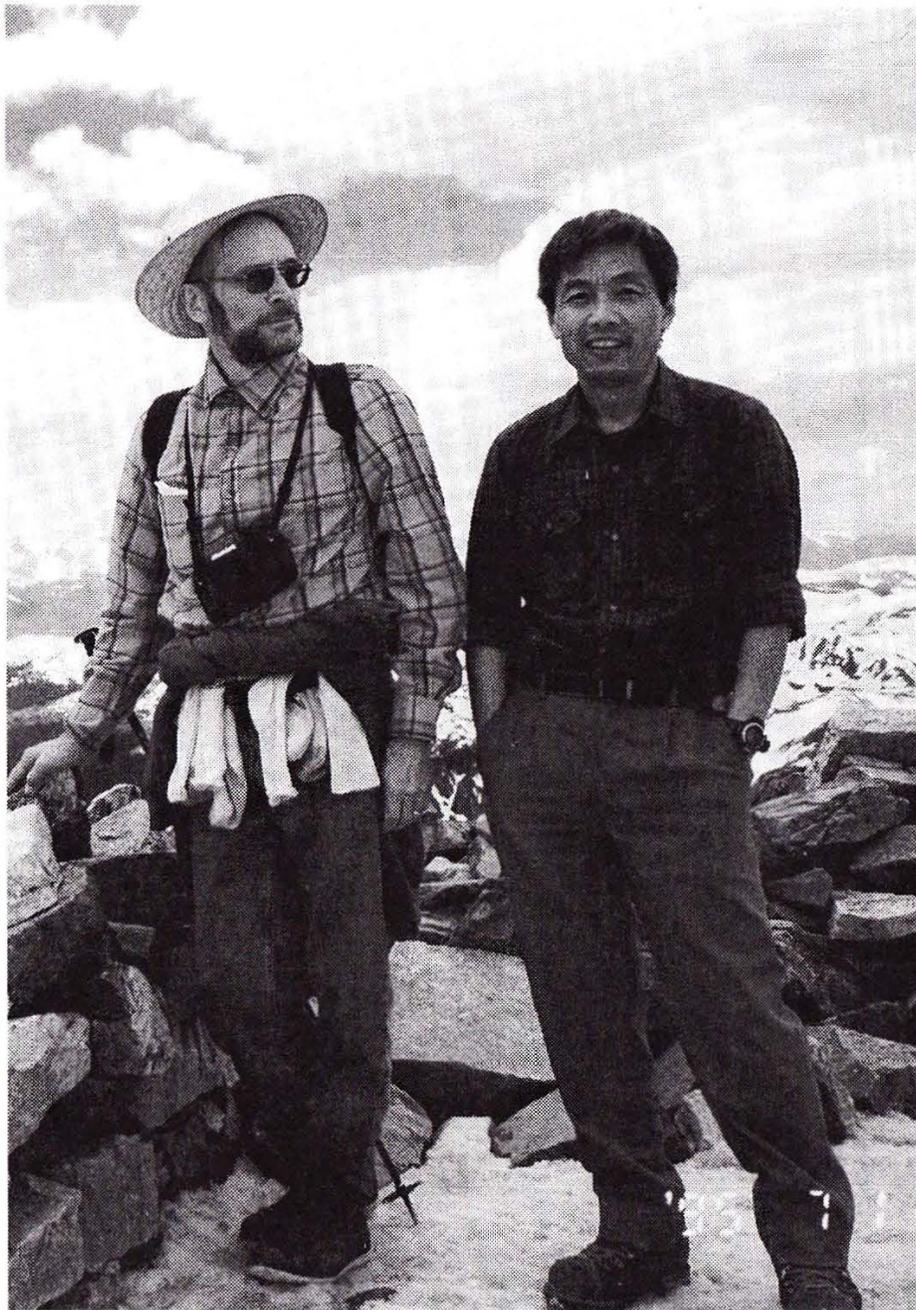
NOTES on other dates and programs of interest:

1. Days with significant meteor shower activity are: Northern Hemisphere 3-5 Jan; 21-23 Apr; 3-6 May; 6-11, 27-29 Jun; 11-14 Aug; 21-23 Oct; 16-19 Nov; 13-15, 22-23 Dec 1996; 3-5 Jan 1997. Southern Hemisphere 3-6 May; 6-11, 27-29 Jun; 28-31 Jul; 21-23 Oct; 16-19 Nov; 13-15 Dec 1996.
2. GAW (Global Atmosphere Watch) -- early warning system for changes in greenhouse gases, ozone layer, and long range transport of pollutants. (See Explanations.)
3. SOLTIP (Solar connection with Transient Interplanetary Processes). Observing Program 1990-1997: solar-generated phenomena and their propagation throughout the heliosphere. (See Explanations.)
4. FLARES22 (FLAre RESearch at solar cycle 22 max). Observing Program 1990-1997: basic physical processes of transient solar activity and its coupling with solar-terrestrial environment. (See Explanations.)
5. Day intervals that IMP 8 satellite is in the solar wind (begin and end days are generally partial days): 6-13 Jan; 18-25 Jan; 31 Jan-7 Feb; 12-20 Feb; 24 Feb-3 Mar; 7-16 Mar; 20-28 Mar; 1-10 Apr; 14-23 Apr; 27 Apr-5 May; 10-18 May; 22-30 May; 3-11 Jun; 16-24 Jun; 28 Jun-6 Jul; 11-18 Jul; 24-31 Jul; 5-13 Aug; 18-25 Aug; 30 Aug-7 Sep; 12-19 Sep; 25 Sep-2 Oct; 8-15 Oct; 21-27 Oct; 2-9 Nov; 15-22 Nov; 28 Nov-4 Dec; 10-17 Dec; 23-29 Dec 1996. Note that there will not necessarily be total IMP 8 data monitoring coverage during these intervals. Also please note that WIND data should be available. (Information kindly provided by the WDC-A for Rockets and Satellites, NASA GSFC, Greenbelt, MD 20771 U.S.A.)
6. + Incoherent Scatter Coordinated Observations Days (see Explanations) starting at 1600 UT on the first day of the intervals indicated, and ending at 1600 UT on the last day of the intervals: 22-24 Jan 1996 GISMOS/FAST; 13-14 Feb POLITE; 19-22 Mar MISETA/CADITS/MLTCS; 16-17 Apr DATABASE; 14-15 May DATABASE; 18-19 Jun SUNDIAL; 16-17 Jul DATABASE; 13-14 Aug DATABASE; 17-18 Sep DATABASE; 8-12 Oct CADITS/MLTCS/ABC; 11-14 Nov POLITE; 10-11 Dec DATABASE; 6-10 Jan 1997 CADITS/MLTCS
 where ABC= APL-BU-Cornell -- Predictors to equatorial spread-F (ESF) effects;
 CADITS= Coupling and Dynamics of the Ionosphere-Thermosphere System;
 DATABASE= Incoherent Scatter Database;
 FAST= Fast Auroral Snapshot (with FAST satellite);
 GISMOS= Global Ionospheric Simultaneous Measurements of Substorms;
 MISETA= Equatorial Dynamics -- Onset and evolution of equatorial spread-F during vernal equinox;
 MLTCS= Mesosphere, Lower-Thermosphere Coupling Study;
 POLITE= Plasmaspheric Observations of Light Ions in the Topside Exosphere;
 SUNDIAL= Coordinated study of the Ionosphere/magnetosphere.

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Additional copies are available upon request to IUWDS Chairman, Dr. R. Thompson, IPS Radio and Space Services, Department of Administrative Services, P.O. Box 5606, West Chatswood, NSW 2057, Australia, FAX (61)(2)414 8331, e-mail richard@ips.gov.au, or IUWDS 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.



The IAGA President on top of events, ably supported by Dave Loper, Secretary of SEDI, during the IUGG Assembly at Boulder. (They are close to 0.5 scale heights above sea level.)

**FOURTH LATIN AMERICAN CONFERENCE ON
SPACE GEOPHYSICS (4th COLAGE)**

Tucuman, Argentina
22-26 April 1996

There will be three types of scientific sessions: invited reviews, public lectures and poster sessions. The official languages are spanish, portuguese and english. The main topics are

Solar physics	Magnetosphere
Interplanetary medium	Ionosphere
Cosmic radiation	Aeronomy
Sun-Earth relationship	Geomagnetism

Results of the Solar Terrestrial Energy Programme [STEP] 1990-1997 and of Antractic research will be included.

Contact: Dr Nieves Ortiz de Adler
Lab. de Ionosfera - Inst. de Fisica
Universidad Nacional de Tucumán
Av. Independencia 1800
4000 Tucumán ARGENTINA
Fax: +54 81 242 166 / 248 025; if this fails, then try
e-mail colage@liifut.edu.ar or telephone +54 81 242 166.

31st COSPAR SCIENTIFIC ASSEMBLY

Birmingham, United Kingdom
14-21 July 1996

The Assembly contains the usual enormous range of topics, nevertheless the format is a six-day meeting of scientific sessions. This change from the old ten/eleven working days with the middle Sunday off is the result of an overwhelming vote in favour of the change (actually, 121 in favour of six days, 103 for continuing with the two-week programme).

Contact: Copernicus Gesellschaft
31st COSPAR Scientific Assembly
Postfach 49, Max-Planck-Strasse 1
37189 Katlenburg-Lindau GERMANY

Telephone: +49 5556 1440
Fax: +49 5556 4709
Telex: 965 515 / COP DE
SPAN: NSP::LINMPI::COP
Internet: COP@LINAX1.DNET.GWDG.DE

**VIIth IAGA WORKSHOP ON
GEOMAGNETIC OBSERVATORY INSTRUMENTS,
DATA ACQUISITION AND PROCESSING**

Niemegk, Germany
8-15 September 1996

In continuation of previous workshops, the main activity will be testing, calibration and comparison of magnetometers (absolute and variation types), the determination of the transfer function, comparison measurements between the observatories and the organization of a symposium. Pre-workshop tests are possible and participants are invited to operate their systems at Niemegk. The workshop will be divided into two parts: September 9-11 for Measurements and Intercomparison; September 12-14 for Symposium and discussion

Contact: Adolf Best Hans-Joachim Linthe
Adolf-Schmidt-Observatorium fuer Erdmagnetismus
Geoforschungszentrum Potsdam
Lindenstrasse 7
D-14823 Niemegk GERMANY

FIRST SPARC GENERAL ASSEMBLY

Melbourne, Australia
2-6 December 1996

The World Climate programme on Stratospheric Processes and their Role in Climate [SPARC] is an international programme with the goal of facilitating research into the relationships between stratospheric processes and their role in climate (both tropospheric and stratospheric). Some of the ongoing SPARC activities concern the following topics:

- * Intercomparison of troposphere-stratosphere general circulation models
- * Compilation of stratospheric climatology for comparison with models
- * Assessment of trends in temperature, ozone, and water vapour
and of the necessary observational capability in these areas
- * Gravity wave processes and their parameterization
- * Stratosphere-troposphere exchange
- * Chemistry of the lower stratosphere and upper troposphere
- * UV radiation and its impacts

The Assembly will include invited, contributed and poster papers. The abstracts deadline is May 1, 1996.

Contact SPARC 96
CRC for SH Meteorology (see footnote)
Monash University, Bldg. 70
Clayton VIC 3168
AUSTRALIA

Acronym expansion: Cooperative Research Centre for Southern Hemisphere Meteorology

8th SCIENTIFIC ASSEMBLY OF IAGA Uppsala, Sweden 4-15 August 1997

The 8th Scientific Assembly of IAGA will be held in Uppsala, Sweden, during the two weeks of August 4-15, 1997. Division and Commission Chairs are planning to convene 77 separate symposia -- some them lasting for 3 days. Scientifically, the sessions will cover the range of purview of IAGA, from solid earth geomagnetism through atmospheric and space physics, including a commemorative lecture on the contributions of Hannes Alfvén. Invited reviews of important topics and contributed papers revealing the most recent research results are expected to encourage discussions and inspire new scientific studies and collaborations.

During the first week, the "Solar Terrestrial Physics Symposium" of SCOSTEP (Scientific Committee on Solar Terrestrial Physics) will be held in conjunction with the IAGA Sessions. The International Association of Meteorology and Atmospheric Sciences (IAMAS) will also convene and participate in joint scientific sessions during this two-week period, further enhancing the scientific value of the Assembly.

Uppsala is easy to reach directly from the nearby (40 km) Stockholm/Arlanda international airport, served by major airlines. Alternatively Uppsala can be reached by train via Stockholm. Uppsala is a friendly town with the atmosphere of an old university in a modern environment. The city has about 160 000 inhabitants and the University has about 20 000 students. The meetings will be held in central Uppsala in university halls and a nearby school. Several hotels and some student rooms will be available. The city has many restaurants and the surrounding countryside will attract excursions.

The local organization will be handled by representatives of the Uppsala Division of the Swedish Institute of Space Physics (Rolf Bostrom, Anita Rogelius, Gunny Janzon), Uppsala University (Laust Borsting Pedersen, Viktor Scuka) and the Swedish Geological Survey (Birna Olafsdottir).

Information on the IAGA 1997 Scientific Assembly and the local arrangements will gradually be made available on the World Wide Web (http://www.irfu.se/iaga_97.html). An Assembly Circular inviting participation will be mailed early in 1996. The local organizers can also be reached by e-mail (iaga@irfu.se) or by fax (+46 18 40 31 00).

THE INDIAN INSTITUTE OF GEOMAGNETISM [IIG]

In 1996, the IIG will celebrate its Silver Jubilee [25 years]; it was in 1971 that the 150-year old Colaba Observatory was upgraded and became the Institute. As part of the celebration, the Institute announces a symposium on **"Geomagnetism in Studies of Dynamics of Earth's Interior and Electrodynamics of its Far Environment"**. This will take place in August, 1996, and will cover electromagnetic induction and source field effect; equatorial electrojet and low-latitude Sq current systems; palaeomagnetism and rock magnetism; environmental magnetism; tectonoelectromagnetism; ionospheric-magnetospheric processes; secular variation and geodynamo. Contact the Director (at the address given below).

HAVE YOU A SPARE THEODOLITE (or 5?)

The Indian Institute of Geomagnetism has been gifted 3 QHM tubes from the Danish Meteorological Institute and they will be used at newly-commissioned observatories. The Institute requires also theodolites with turntables and stands. The Institute would be very grateful to receive a few (they need 5) of these. If any agency can give them, please contact

The Director, Indian Institute of Geomagnetism
Colaba Bombay 400 005 INDIA

NOBEL LAUREATES

The 1995 Nobel Prize for Chemistry was shared between Paul Crutzen, F Sherwood Rowland and Mario Molina. Their work on the chemistry of the Middle Atmosphere is well known and has had a profound effect on the development of studies of the ozone layer and its anthropogenic modification. Congratulations to them all!

Sir Ian Axford, K.B.

At the New Year, Her Majesty Queen Elizabeth II bestowed the honour of Knight Bachelor upon Ian Axford. Congratulations to Sir Ian.

ADOLF K PAUL

1926-1995

Adolf Paul died at home in Boulder, Colorado, USA, on September 4. He was renowned in the scientific community for his work on ionospheric physics. In 1971, he received the Distinguished Authorship Award at the Department of Commerce, Institute of Telecommunications.

He was born on March 6, 1926, in the Bavarian village of Engen an der Steige, not far from Lake Konstanz. In 1945, he was drafted into the army, hurriedly taught to drive a tank, and promptly captured by the Soviet Army. He spent most of the next three years underground in the coal mines of the Soviet Union. During this time, he fashioned chess sets, which won interest and slight kindnesses from the Russian guards, and also improvised resistive heaters from bedsprings to supplement a meagre ration of coal. Returning in 1948, he entered the Albert Ludwig University, Freiburg, earning his diploma in mathematics and physics by 1954, when he joined the Ionosphere Institute at Breisach.

His doctorate in physics from the University of Freiburg followed in 1962. Five years later he emigrated to the USA where he worked in Boulder for what was to become the National Oceanic and Atmospheric Administration, and later in San Diego, California, for the Naval Ocean Systems Center. He retired in 1991 but remained active in research until his death. In 1994, he contracted with the National Geophysical Data Center in Boulder to assist with the archive of ionospheric data and ionograms from the San Diego digital ionosonde. In July of this year, he contributed papers to the Ionospheric Irregularities and Instabilities session of IAGA at the IUGG General Assembly.

He was well respected by the ionospheric community. In the early 60s, Karl Rawer had spoken highly of new ideas about ionogram inversion developed by 'one of the younger people at his Institute in Breisach'. These ideas represented a major advance over Budden's formulation; Paul had a special ability to see simplifications of complicated problems which he could then put into rigorous form. His profile inversion work included the implicit invention of the cubic spline. He showed how to get profile information "top-down" starting from the F-peak. In the 1970s, he made contributions to the analyses of time series through development of the anharmonic frequency technique, and developed an early technique for ray-tracing in ionospheric holes. He saw the 'Gibbs phenomenon' as unnecessarily cluttering Rydbeck's and Budden's computations of pulse dispersion in the ionosphere. We now understand radio phase and group paths much more clearly from his arrangement of their relationships. He discovered the stimulation of Spread-F by radiowave heating of the ionosphere.

Paul's dependable judgement was central to the development of digital ionosondes; in recent years, he was particularly concerned with the promotion of the digital ionosonde technique and its use in studying rapid changes in the height of the nighttime ionosphere.

Paul married and had four children (Regine, Gabriele, Winfried and Wolfgang). His death robs our community of a beloved and respected colleague. A Memorial Session to honour Paul is planned for the International Union of Radio Science (URSI) US Meeting in January 1996.

KO'L

STANLEY KEITH RUNCORN

1922-1995

The tragic and untimely end of Keith Runcorn has shocked his many colleagues and friends. On his way to the most recent AGU Fall Meeting in San Francisco he was murdered in San Diego, California, USA.

An undergraduate in Cambridge, England, during World War II, he was appointed an Assistant Lecturer in Manchester University to do research under Patrick Blackett on cosmic rays. Blackett was developing his theory on "The Magnetic Field of Massive Rotating Bodies". Runcorn decided that it should be possible to distinguish between this and the Elsasser and Bullard geodynamo concept by using a coal mine in Lancashire to measure the variation in geomagnetic field intensity with depth. Aided among others by two undergraduates, Raymond Hide and Frank Lowes, the measurements favoured the core origin rather than the radially-distributed rotating-body origin.

In 1953, appointed an Assistant Director of Research in Geodesy and Geophysics at Cambridge, Runcorn began a group dedicated to paleomagnetism and quickly showed that the British Isles appeared to have moved in latitude throughout the Phanerozoic. The resulting polar wander curve was presented at the IUGG General Assembly of that year.

In 1955, Runcorn moved to Newcastle on Tyne and after several summers of transatlantic field work, a polar wander curve for the North American continent was obtained. Results from Australia, South America and Africa quickly followed and it became clear that the continents had moved relative to each other but acceptance by the broad geophysics community of the reality of continental drift took almost two decades, even with the additional evidence from sea-floor spreading.

Runcorn never married and this single state gave him the freedom to devote his life to the pursuit of the science he loved. A restless traveller, he enjoyed nothing more than visiting his friends and colleagues the world over. He travelled so much that, at Newcastle in the nineteen-sixties, he became fondly known to his staff as the Visiting Professor of Physics. One wit referred to him as the Theoretical Professor of Physics. Nothing bored him more than long meetings of Senate or Faculty, he regarded university politics as parochial. He never served on any of the committees of IAGA although frequently at the meetings. He did serve on the Council of the Royal Astronomical Society in London from which he received a Gold Medal in 1984. He was awarded, among his many distinctions, the Vetlesen Prize (1971), the John Adams Fleming medal of AGU (1983) and the Wegener Medal of the EUG in 1987. He had honorary degrees from Utrecht (1969), Gent (1971), Paris (1979) and Bergen (1980). He retired from Newcastle in 1988 and took up the Sydney Chapman Endowed Chair in the Natural Sciences at the University of Alaska, USA.

He was a great scientist with a warm and sincere personality and he was a true friend: modest and unpretentious despite his achievements, he will be sorely missed.

KMC

LONG-SERVICE AWARD



Acceptance by Zhou Jinping:

Dear Secretary-General, Dear Chairman, Ladies and Gentlemen:

I am very honoured today to be here receiving the "Long-Service Medal of IAGA". I regard this medal as a high honour. I realize that this medal is not for me personally, it belongs to the whole Chinese geomagnetic circles. It will serve as a great encouragement to all my colleagues back in China.

May I take this opportunity to thank Mr Don Williams and all other IAGA committee members for their attention and support to the geomagnetic fieldwork and research in China. Special thanks to BGS for organizing this gathering, and thank you, Mr Secretary-General, for your personal presence at this very special occasion.

Geomagnetic observation is beyond national boundaries. For me it is a privilege to be part of a global observation network. I, always with all my colleagues in China, will look forward to further international cooperation, and make further contribution to the understanding of geomagnetism as a whole. Thank you.

The medal was presented at an informal meeting chaired by David Kerridge, Chairman of Division V, in the British Geological Survey Offices in Edinburgh (Scotland) on 28 July 1994.

**INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY
(IAGA)**

IAGA is one of the seven 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 standardisations of observational programmes, data acquisition systems, data analysis and publication.

IAGA holds an Ordinary General Assembly every four years in conjunction with each Ordinary General Assembly of IUGG. Between the Ordinary 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 8th Scientific Assembly which is scheduled for 4-14 August 1997 in Uppsala, Sweden.

IAGA has two types of publications:

(i) **IAGA Bulletins**, which include the Programme and Abstracts of the Assemblies; Geomagnetic Data and Indices, published annually; and special Data Summaries or Information Booklets, published occasionally.

(ii) **IAGA News**, which contains items and announcements of general interest to the IAGA community and which is published annually.

The IAGA Bulletins are available at low cost from the Secretary-General of IAGA. The IAGA News is sent free of charge to all addresses on the IAGA Mailing List (which at present contains nearly 2400 addresses of individual scientists in more than 80 countries) and is available on request from the Secretary-General.

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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