



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

Professor William R. "Bob" Sheldon ..... 7  
 Harry E. Petschek, 1930-2005..... 8  
 Yury Pavlovich Maltsev, 1945-2005..... 8  
 Kendall Svendsen ..... 9  
 Harry C. Koons, 1942-2005 ..... 9

**General Information about IAGA..... 10**

## IN THIS ISSUE

**Foreword**..... 1  
**Message from the IAGA President**..... 2  
**The IAGA Scientific Assembly, Toulouse, France, July 18-29, 2005** ..... 2  
 Assembly Statistics ..... 2  
 Timetable of Meetings..... 3  
**Report from the Meetings of the IAGA Conference of Delegates held in Toulouse** ..... 3  
 In Memoriam ..... 3  
 The President's Report ..... 3  
 The Future of IAGA ..... 3  
 Important Decisions ..... 4  
 IAGA Awards ..... 4  
 Resolutions ..... 4  
**Report from the Executive Committee Meetings held in Toulouse** ..... 5  
 The Future of IAGA ..... 5  
 Geographical Distribution of IAGA Officers..... 5  
 IAGA Awards ..... 6  
 Leadership of the Inter-Divisional Commission on History ..... 6  
 Executive Committee Meeting in 2006 ..... 6  
**Preparations for IUGG 2007**..... 6  
 Timetable and Deadlines ..... 7  
**ICSU/IUGG News** ..... 7  
**Other Reports** ..... 7  
 Reports from IAGA Divisions/Commissions..... 7  
 Reports on IAGA-Sponsored Projects/Meetings..... 7  
 IAGA Observatory Workshop, Belsk..... 7  
**Obituaries**..... 7

## IAGA ON THE WEB

Information on IAGA is regularly updated at the IAGA site: <http://www.iugg.org/IAGA/>

## Foreword



This issue of *IAGA News* is to a large extent devoted to the outcomes of the X<sup>th</sup> IAGA Scientific Assembly held in Toulouse, France on July 18-29, 2005, and the associated Conference of Delegates and Executive Committee meetings. *IAGA News* in the

present form consists mainly of brief summaries, or even simply titles of news items, and the reader is then referred to the IAGA web site ( [www.iugg.org/IAGA/](http://www.iugg.org/IAGA/) ) for more details. *IAGA News* has, in the past, included short articles, reports and announcements of interest to the IAGA community. This tradition will continue. Contributions are invited and should be sent to the Secretary-General.

*IAGA News* is distributed to National Correspondents and other national representatives we know of, to all IAGA officers, to IAGA scientists who attended recent IAGA Assemblies and to various research organisations in countries around the world. Many scientists interested in IAGA activities are probably not reached through this original distribution, so it would be very much appreciated if you, the reader, would forward *IAGA News* to persons who may not be on our distribution list. If you are uncertain, it is better that they get several copies of *IAGA News* than none. National policy makers and leaders, whose decisions affect IAGA activities, need to be informed about IAGA, so, please forward *IAGA News* to such persons in your country.

**Bengt Hultqvist**  
Secretary General

## Message from the IAGA President



The 2005 Scientific Assembly of IAGA, held jointly with ICMA, was remarkable in many ways. Most important was the exceptionally high quality of the science and the Association Lectures by Jean-Louis Le Mouél, Dan Baker, David Loper, and Sunanda Basu. The Pierre Baudis Congress Center in Toulouse provided the best facilities that we have ever had for an Assembly, and the welcome we received from our French hosts was outstanding. Roland Schlich, Executive Secretary of IAGA 2005, and Bengt Hultqvist, Chair of the Programme Committee, deserve special recognition and thanks for the enormous amount of work they did.

Toulouse will be remembered as the last of the 2-week Assemblies. After many years of debate on the topic, the decision to limit future Assemblies to 6 working days was passed with only a single dissenting voice. Perhaps the bomb scare at the beginning of the second week was another sign of changing times, as well as a demonstration of the international recognition now accorded IAGA!

Your Executive Committee has taken steps to encourage more involvement by Division and Commission leaders and by young scientists in policy formulation. This has proved to be a great success, and has resulted in a comprehensive list of recommendations that are gradually being implemented. (Shorter Assemblies was the main one.) A specially pleasing outcome has been the establishment of an Inter-Divisional Working Group on Education and Outreach, with interim Chair Emily CoBabe-Ammann from the University of Colorado.

I am also pleased that IAGA has been able to play a prominent role in IGY+50 activities, which mark the approaching 50-year anniversary of the International Geophysical Year, 1957-1958. IAGA has taken a lead role in organising the Electronic Geophysical Year, 2007-2008 ([eGY](#)) and has used this as a common theme to help link the other three International Geoscience Years ([IYPE](#) - the International Year of Planet Earth, [IPY](#) - the International Polar Year, and [IHY](#) - the International Heliophysical Year) as well as to connect with the Global Earth Observing System of Systems ([GEOSS](#)).

The proliferation and increasing cost of major conferences is a source of concern. Special topic meetings satisfy a different need and these grow ever more popular. IAGA takes pleasure in supporting such meetings. But the large regional meetings (AGU, EGU, AOGS, and others) overlap in many respects with the

main international conferences, and compete for participants. What sets IAGA apart is a combination of its scientific focus on geomagnetism and aeronomy and its internationally inclusive character. This is what makes us a large, active, and happy family.

**Charles Barton**  
President

---

## The IAGA Scientific Assembly, Toulouse, France, July 18-29, 2005

### Assembly Statistics

IAGA was joined in Toulouse by the International Commission on the Middle Atmosphere (ICMA). The Assembly was held at the Pierre Baudis Congress Centre, which was an excellent venue for an IAGA Assembly.

The total number of registrants attending the Assembly was 861 from 58 countries. The largest number of participants came from the USA (169), the second largest number from Japan (100), followed by France (87), Germany (81), UK (73) and Russia (43).

For comparison, the total number of IAGA registrants at the IUGG 2003 General Assembly was 741, which was 134 less than at the previous IUGG General Assembly in Birmingham in 1999 (875). The IAGA Scientific Assembly In Hanoi in 2001 had a smaller number of participants but in Uppsala in 1997 the number was much higher (1175), partly because it was a joint Assembly with both ICMA and SCOSTEP as partners. The number of participants in Toulouse was thus in the range of earlier Assemblies, but it was somewhat lower than expected. In particular, the number of students was low, a fact which will have to be seriously considered in organizing coming Assemblies.

A total of 61 symposia, covering all aspects of the IAGA and ICMA scientific fields, were organized and were distributed as follows between joint symposia of IAGA and ICMA, ICMA alone, and IAGA Division/Commission symposia:

JS*	5
Division I	15
Division II	7
Division III	14
Division IV	7
Division V	9
IDCDC**	2
IDCH***	1
ICMA	1

\* Of the 5 joint symposia, 2 were led by Division II of IAGA, and 3 by ICMA  
 \*\*IDCDC – Inter-Divisional Commission on Developing Countries  
 \*\*\*IDCH – Inter-Divisional Commission on History

The number of papers accepted for those 61 symposia was 1390, distributed as follows:

Joint symposia (IAGA/ICMA)	136
Division I symposia	294
Division II symposia	151
Division III symposia	335
Division IV symposia	151
Division V symposia	177
IDCDC symposia	29
IDCH symposium	24
ICMA symposium	93

Of the 1390 papers 867 were presented orally and 523 were posters.

### Timetable of Meetings

The CoD and EC meetings took place on the following dates:

- First meeting of the Conference of Delegates, 19 July 2005
- Second meeting of the Conference of Delegates, 27 July 2005
- First meeting of the Executive Committee, 18 July 2005
- Second meeting of the Executive Committee, 26 July 2005
- Third meeting of the Executive Committee, 29 July 2005

Reports on IAGA activities in Toulouse, including the Association Lectures and the minutes of meetings can be found at following link: [\[Toulouse reports\]](#).

## Report from the Meetings of the IAGA Conference of Delegates held in Toulouse

### In Memoriam

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

08/03: **Virginia Lincoln**, NGDC, USA; Solar cycle; Chief NGDC STP

11/03: **Lanny Wilson**, USGS; Magnetic observatories; data management

12/03: **Jack Jacobs**, Wales & Alberta; Geodynamo & core

12/03: **Jim Carrigan** BGS; Magnetic observatories & surveys

12/03: **Chung Park**, USA; Magnetospheric physics

02/04: **Mikhail Pudovkin**, St Petersburg; Magnetosphere, ionosphere, polar geomagnetism

02/04: **D.R.K. Rao**, Mumbai; Magnetic Observatories

04/04: **Rosemary Hutton**, Edinburgh; Crustal EM induction

04/04: **Elizabeth Essex**, La Trobe University, Australia; Ionospheric physics, GPS studies

05/04: **Jim Dooley**, Canberra; Main & crustal field analysis, Magsat, aeromagnetic surveys

08/04: **Tsuneji Rikitake**, Univ Tokyo and TokyoIT; EM studies, geodynamo, earthquake prediction

09/04: **Paul Melchior**, Belgium; Sec-Gen IUGG 1973-91; geodesy

10/04: **Thomas M. Donahue**, USA; Planetary science, Chair Space Studies Board

03/05: **Harry Petchek**, USA; Space plasma physics, MHD, intra-aorta balloon

04/05: **Bob Sheldon**, Univ. Houston, USA; Cosmic rays, Magnetospheric physics

05/05: **Harry C. Koons**, USA, Space weather

06/05: **Yuri Maltsev**, Polar Geophysics Institute, Russia, Auroral and ionospheric physics

### The President's Report

Charles Barton, the IAGA President, reported to the first Conference of Delegates (CoD) meeting about the operational activities that the IAGA Executive had pursued since the 2003 General Assembly. [\[Report\]](#).

### The Future of IAGA

A major theme of the administrative meetings in Toulouse, both at the CoD and EC level, was "the future of IAGA"; how to modify the procedures and programmes of IAGA in order to make the Association well adapted to current trends.

A Young Scientists' Committee, chaired by Richard Holme, had been formed to consider this question, from the perspective of young scientists.

A Task Group of more senior scientists, chaired by Kathy Whaler, had also been established, and worked independently of the Young Scientists' Committee. The

approach taken by this group was to consult IAGA officers and National Correspondents by means of questionnaires.

Both committees reported on their findings.

A set of draft recommendations, based on the analysis of the questionnaire returns and the outcome of the Young Scientists' Committee review, was prepared.

[\[Young Scientists' Committee report\]](#)

[\[Task Group questionnaire\]](#)

[\[Task Group recommendations\]](#)

---

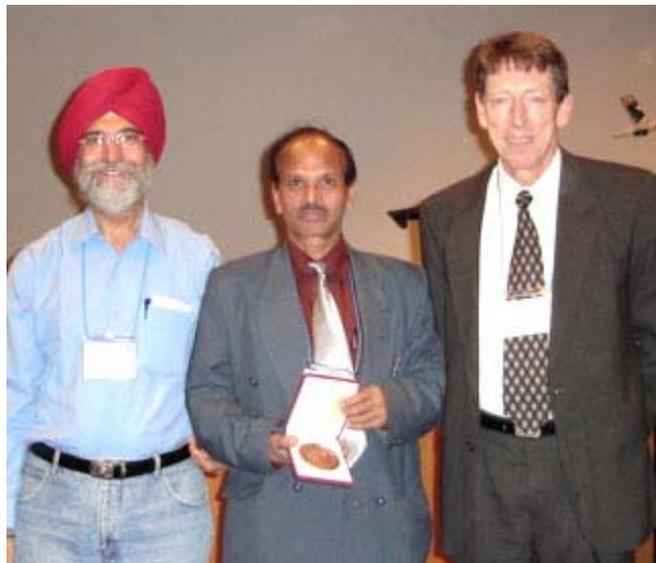
## Important Decisions

Two particularly important decisions were taken by the CoD in Toulouse, the first of which was a result of the deliberations about "the future":

- The duration of future IAGA Assemblies, General as well as Scientific, will be 6 full working days for the scientific programme (generally Monday to Saturday) and one preceding day (Sunday) for administrative meetings (Conference of Delegates and Executive Committee).
- The next Scientific Assembly, in 2009, will take place in Sopron, Hungary, in late August. [\[IAGA 2009 website\]](#)

---

## IAGA Awards



The IAGA Long Service Medal, recognising valued services to the IAGA community over many years, was awarded to Raghav Chandra Deka, India (pictured above). [\[Citation\]](#)

The President also made an award to the former Secretary General, Herbert Kroehl, as an expression

of thanks for his work for IAGA. Dan Baker accepted this on behalf of Dr Kroehl.

---

## Resolutions

The CoD adopted the following resolutions, also available in both French and English at the following link. [\[Resolutions\]](#)

### 1. Open access to scientific data

IAGA, *considering* the major effort that has gone into generating a vast amount of extremely diverse primary data, and, *noting that* archiving and maintaining databases makes precious legacy data accessible for future generations through open, web-based interfaces *commends* initiatives to disclose these data by means of databases available to the scientific community and the general public, and, *urges* relevant agencies to give high priority to such activities.

### 2. Data rescue

IAGA, *recognising* the importance of long time series of geomagnetic data *appreciates* the support given by ICSU to recent efforts to rescue valuable magnetograms, and, *urges* that similar rescue and data retrieval activities be supported by relevant agencies.

### 3. International Decade of Geopotential Field Research: availability of data and models

IAGA, *noting* the success of the International Decade of Geopotential-Field Research and the important contribution made by the European Space Agency, ESA, in deciding to launch the Swarm geomagnetic mission in 2009 as a continuation of the presently-operating magnetic survey satellites, and, *considering* IUGG Resolution 1, passed in 1999, urging governmental and international agencies to sustain and improve national and international geodetic and geophysical monitoring systems, and promoting the free and unrestricted transfer of data, *strongly encourages* space agencies, institutions and funding organisations to support initiatives to improve the availability of, and access to, science data and models in order to maximise the scientific return from these missions.

### 4. Continuity and rapid production of auroral electrojet indices

IAGA, *noting that*

- scientific progress in understanding magnetospheric and ionospheric dynamics is adversely affected by the unavailability of the definitive auroral electrojet indices for years beginning in 1995, and,
- the international community is anticipating active cooperation with NASA's THEMIS mission which

addresses physical processes monitored by these indices

*urges* relevant national funding agencies, research institutions and scientific investigators to invite participation from the international science community to assist in

- constructing recent auroral electrojet indices, and,
- implementing a system to achieve timely production of the auroral electrojet indices, not later than the start of NASA's THEMIS mission prime phase (autumn 2006).

#### **5. International Year initiatives celebrating the IGY**

IAGA, *noting* the success of the International Geophysical Year (IGY) in 1957/8 and the resultant dramatic advances in science relevant to IAGA, and, *recognising* that IAGA has established the electronic Geophysical Year, which should lead to more open access to data, the development of virtual observatories, and digitised versions of analogue data, *endorses* the other complementary international programmes celebrating the IGY: the International Year of Planet Earth (IYPE), the International Heliophysical Year (IHY), the International Polar Year (IPY), and Climate and Weather of the Sun-Earth System (CAWSES), and, *urges* these related international programmes to work closely with IAGA and eGY to achieve the objectives of each programme.

#### **6. Geomagnetic observations in Russia**

IAGA, *recognising*

- the importance of global coverage and timely delivery of magnetometer data for production of the auroral electrojet indices, and,
- the success of current Russia-Japan-US collaborative efforts to operate magnetometers at Russian stations located in the auroral zone, and the associated near-real-time data transmission system,

*endorses* this international collaboration *urges* funding agencies to provide adequate support for the collaboration, and, *encourages* other international organisations to support this effort.

#### **7. Maintenance of ground-based observatories to support magnetospheric/ionospheric dynamics research**

IAGA, *recognising that*

- continued progress in basic magnetospheric/ionospheric physics research increasingly depends on globally distributed ground-based observations of aurora, ionospheric parameters, and magnetic fields

- operating observatories is one of the most effective ways in which scientists in the developing world can contribute significantly to the progress of basic science and thereby promote international cooperation in basic geoscience research, and,

*noting that* modern technological infrastructures are adversely impacted by the space environment, particularly during geomagnetic storms

*urges*

- national funding agencies to continue support for ground observatories providing data to characterise the magnetosphere/ionosphere system
- scientists and national funding agencies to promote and support cooperation in sharing data from these observatories for open use by the international scientific community.

#### **8. Resolution of thanks**

IAGA, *noting* the scientific success and excellent organisation of the IAGA/ICMA Scientific Assembly in Toulouse, and, *appreciating* the enormous amount of work required to organise the meeting *expresses* its deep gratitude to the members of the Local Organising Committee, led by Michel Blanc and Roland Schlich, for their efforts to make the Assembly such an outstanding success.

---

## Report from the Executive Committee Meetings held in Toulouse

### The Future of IAGA

The Executive Committee (EC) discussed the matter of attracting more young scientists and students to IAGA Assemblies in the future. It was decided to devote a larger proportion of IAGA funds to help needy persons to participate in Assemblies than previously, particularly young scientists and students. New awards for young people, also intended to stimulate participation, were agreed (see 'IAGA Awards' below).

---

### Geographical Distribution of IAGA Officers

To avoid unacceptable geographical distributions of IAGA officers, it was agreed that the Divisions and Commissions will be asked to nominate, at their business meetings during General Assemblies, two candidates for both Chair and Vice-Chair. The Executive Committee will appoint the Chairs and Vice-

Chairs, taking into account the geographical distribution of the entire group.

---

## IAGA Awards

IAGA will establish two new awards, aimed at young scientists:

- An award to an 'Outstanding young scientist', to be decided by a Working Group within the EC
  - Awards for 'Best contribution by a young scientist to IAGA-led topical meetings between Assemblies'. The award will consist of support to attend the next Assembly.
- 

## Leadership of the Inter-Divisional Commission on History

The EC appointed Ed Cliver (USA) as Chair and Nicole Meyer-Vernet (France) as Vice-Chair of the Inter-Divisional Commission on History for the period up to the next General Assembly in 2007.

---

## IAGA Sponsorship of Scientific Meetings to be held up to the end of 2006

The Executive Committee agreed (at Toulouse and in September by correspondence) to allocate the following amounts to meetings to be held after the Assembly and before the end of 2006:

- The 10<sup>th</sup> "Castle" meeting on paleo, rock and environmental magnetism" in Valtice, Czech Republic, September 3-8, 2006 (USD 1500) [\[website\]](#)
- The 36<sup>th</sup> COSPAR Scientific Assembly in Beijing, China, July 16-23, 2006 (USD 500) [\[website\]](#)
- IAU symposium 233 on "Solar activity and its magnetic origin" in Cairo, Egypt, March 31- April 3, 2006 (USD 1000) [\[website\]](#)
- 3rd IAGA/ICMA Workshop on "Vertical coupling in the atmosphere-ionosphere system" in Varna, Bulgaria, 18-22 September 2006 (USD 1500).
- 4<sup>th</sup> IAGA/ICMA/CAWSES workshop on "Long-term changes and trends in the atmosphere", in Sodankylä, September 4-8, 2006 (USD 1500) [\[website\]](#)
- 2<sup>nd</sup> VERSIM Workshop on "ELF/VLF radio phenomena, in Sodankylä, September 18-22, 2006 (USD 1000) [\[website\]](#)

- 18<sup>th</sup> Electromagnetic Induction Workshop, to be held in Vilanova i La Geltrú, Barcelona, Spain on the 17-23 September 2006 (USD 1500) [\[website\]](#)
- 

## Executive Committee Meeting in 2006

The EC decided to meet in conjunction with the COSPAR meeting in Beijing, on July 23-24, 2006.

---

## Preparations for IUGG 2007

The first meeting of the Programme Committee for the IUGG General Assembly in 2007 took place in Perugia, Italy on September 12-13, 2005. The Union symposia were agreed:

- 'Our Changing Planet' (theme of the Assembly); IAMAS lead; 2 half-days on Monday a.m. in both weeks.
- 'IGY+50 and I\*Y' ; IAGA lead (Michael Kuhn convener); 1 half day on Tuesday a.m. in first week
- 'Global Observing Systems, Past, Present and Future'; IAG lead; 1 half day on Tuesday p.m. in first week.
- 'Information and Data (including eGY)'; IAGA lead; 1 half day on Wednesday a.m. in the first week

(The last three items above are considered to be an 'IGY bloc'.)

- 'Solar and Planetary Geophysics'; IAMAS lead; 1 half day on Thursday a.m. in first week.
- 'Early Warning of Natural Hazards Using Space Technology' (following a Union Lecture on Tsunamis); IASPEI lead; 1 half day on Friday a.m. in 2nd week.
- 'High- Performance Computations in Geophysics'; IASPEI lead; 1 half day on Friday p.m. in 1st week.
- 'Modelling and Simulation of Geophysical flows'; IAVCEI lead; 1 half day on Thursday a.m. in 2nd week.
- 'The Mediterranean as a Geophysical Laboratory'; IAPSO lead; 1 half day on Tuesday a.m. in 2nd week.
- 'Non-linear Physics: Challenges and Advances'; IAHS lead; 1 half day on Friday a.m. in 1st week
- 'Earth System Interactions'; IAMAS lead; 1 half day on Wednesday a.m. in 2nd week.

In addition there will be a special Union event on Saturday morning in 1st week on 'African Geophysics'.

IGA will have 6 full days of sessions (Monday to Saturday, July 2-7) in the 1<sup>st</sup> week.

In total, 222 symposia have been proposed for Perugia, of which 65 come from IAGA.

---

## Timetable and Deadlines

- Delivery of programmes, with descriptions of symposia and complete information about conveners and co-conveners, by the Associations, 31 January 2006
- Publication of the 2nd circular (with call for papers) by LOC, 1 April 2006
- Publication of 3rd circular (containing registration fees etc), only at the web-site, 1 December 2006
- Abstract deadline, 31 January 2007
- Grant application deadline, 31 January 2007
- Convener's information about which papers have been accepted, 28 February 2007
- Grant selection, 15 March 2007
- Letter sent by LOC to grant applicants, 31 March 2007
- Early registration ends, 15 April 2007
- Conveners return session programmes, 1 May 2007
- Full programme posted, 31 May 2007

[\[IUGG 2007 website\]](#)

---

## ICSU/IUGG News

A consortium of Scientific Unions dealing with Earth has been formed, comprising IUGG, IUGS, IUSS, IGU, and ISPRS.

At the recent ICSU Executive meeting in China it was decided to keep FAGS within ICSU for three more years.

IUGG - International Union of Geodesy and Geophysics

IUGS - International Union of Geological Sciences

IUSS - International Union of Soil Sciences

IGU - International Geographical Union

ISPRS - International Society for Photogrammetry and Remote Sensing

FAGS - Federation of Astronomical and Geophysical Data Analysis Services

---

## Other Reports

### Reports from IAGA

#### Divisions/Commissions

Reports about the activities of the Divisions and Commissions of IAGA can be found at the IAGA web site.

---

### Reports on IAGA-Sponsored Projects/Meetings

Reports on the following IAGA-sponsored projects/meetings can be found at the IAGA web site:

- 2004 Annual Report of Inter-Association (IAGA/IASPEI/IAVCEI) Working Group on Electromagnetic Studies of Earthquakes and Volcanoes (EMSEV). [\[Report\]](#)
  - International Seminar on Geomagnetism in Indonesia, 7-9 September 2004. [\[Report\]](#)
  - 2nd IAGA/ICMA Workshop on Vertical Coupling in the Atmosphere/Ionosphere System, July 12 – 15, 2004, Bath, UK. [\[Report\]](#)
- 

### IAGA Observatory Workshop, Belsk

The XII<sup>th</sup> IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing will be held at the Central Geophysical Observatory, Belsk, Poland, June 19-24, 2006.

[\[website\]](#)

---

## Obituaries

### Professor William R. "Bob" Sheldon

Bob Sheldon died on April 25, 2005 in Helsinki, Finland. At the time of his death, Bob was Emeritus Professor of Physics at the University of Houston. He was born the only child of Charles Floyd Sheldon and Grace Truman Wrighton May 17, 1927 in Ft. Lauderdale, Florida. He grew up in Tell City, Indiana. He spent his final year of high school in Tulsa, Oklahoma and graduated from Tulsa High School. He enlisted in the Navy after high school and spent two years in that service. Upon discharge from the Navy, he entered the University of Missouri, graduating with a B.S. in physics in 1952. He joined the Air Force in 1952 and served as a radar observer in a jet squadron stationed in Japan. He left that service as a first lieutenant in 1955.

With funding from the GI Bill he was able to reenter the University of Missouri's graduate school in physics and received his PhD in 1960. His research career in atmospheric and space physics then started at the Boeing Company in Seattle. In 1966 he moved to the Southwest Center for Advanced Studies in Richardson; this institution developed later into the University of Texas at Dallas. Two years later he joined the faculty at the University of Houston, where he remained for the duration of his career.

Bob had wide-ranging research interests. Early in his career, he was primarily involved with cosmic ray studies. He was a US co-PI of the muon spectrometer in the Mont-Blanc tunnel, among other projects. In magnetospheric physics, he was involved a number of X-ray bremsstrahlung studies of electron precipitation in the auroral zone, produced by wave-particle interactions and from the outer radiation belts. In recent years, he had been involved in studies of stratospheric ozone. He was particularly interested in the effect of sunrise, and the perturbations produced by rocket launch exhaust plumes.

Bob was an enthusiastic traveler. His research took him to the Kergulen Is, twice to Antarctica, the Arctic on two continents and repeatedly to Europe, most often to France and Russia. He was a member of the Explorer's Club.

Bob married twice. He married Mary Hotwick in 1951 and had two children: William R. Sheldon, Jr. and John Christopher Sheldon. He married his 2nd wife Marielle in 1979 and had a daughter, Olivia Caroline Sheldon. Through his eldest son Bill Sheldon, Bob has three granddaughters, Gwendolyn Laura, Katharine Rose and Christina Eldyss Sheldon.

### **Edgar Bering**

---

### **Harry E. Petschek, 1930-2005**

It is my solemn duty to report that our dear friend and colleague, Dr. Harry E. Petschek, age 74, died Tuesday, March 29, 2005 after a long illness. The scientific community has lost a brilliant mind and the world has lost a kind, generous, and caring man. The following is extracted from text written by the Petschek family.

Dr. Petschek was born in Prague on September 12, 1930 and came to the US with his family in 1938 to escape the Nazi invasion of Czechoslovakia. He studied engineering physics at Cornell and today he is often referred to as "the father of magnetic reconnection" for groundbreaking theoretical work he did in 1964.

Harry worked for 25 years at the Avco Everett Research Laboratory, a defense and aerospace laboratory. During his tenure there he was involved in

the physics of reentry from space. Among other work at Avco, he was involved with magneto-hydrodynamic power generation and the study of laboratory and space plasma physics. He was prominently involved in resolving the question of how magnetic energy could be transformed to kinetic energy as rapidly as it had been observed on the sun and throughout space.

Throughout his professional life he looked for ways that science could make important social contributions. As Vice President and later President of Avco, Harry used his technical resources and his expertise in fluid dynamics to study blood clotting. In the late 1960's he collaborated with three colleagues in creating the intra-aorta balloon, a device for treating heart failure that has been used by millions of patients around the world and remains in common use today. Harry contributed his extensive knowledge of aerodynamics and physics to this and other humanitarian medical ventures.

While staying on the cutting edge of science he was also at the heart of social change in the 1960's. His contributions to the civil rights movement are documented in the Pulitzer Prize winning book, "Common Ground", which describes Harry's masterminding of the first racial discrimination test case in Lexington. That test case eventually led to the first civil rights demonstration on historic Lexington Green.

After leaving Avco, he founded two companies, OmniFlow and Autogen, which were both eventually acquired. At OmniFlow he led the development of a more versatile hospital bedside infusion pump that is used widely in hospitals today. At Autogen, he developed an automated device for extracting DNA from biological samples.

In the mid-1990's, Harry joined Boston University's Center for Space Physics as a Research Fellow. Despite being officially in retirement, Harry once again became an active member of the international space science community, a return to his scientific roots and passion. While at BU, he published scientific papers on the emerging field of space weather, on nano-satellite mission designs, and on the theory of magnetic reconnection.

Dr. Petschek is survived by his wife, Mary, two daughters, two sons, two stepchildren, and 11 grandchildren

### **Harlan Spence**

---

### **Yury Pavlovich Maltsev, 1945-2005**

A friend and colleague Dr. Yuri Pavlovich Maltsev - a remarkable, outstanding person, a prominent scientist, and the head of theoretical studies team at the Polar Geophysical Institute - tragically died in an outdoor accident in remote area of the Kola peninsula.

Yuri came to the PGI in 1968, after graduating from the University of St. Petersburg (former Leningrad). His professional career began from a position of laboratory assistant to that of a leader of the institutional research laboratory. He received his PhD Degree in 1973 and then defended the advanced "Doctor of Science" Thesis in 1986. His studies on the theory of magnetosphere-ionosphere coupling, theory of waves in the magnetosphere-ionosphere system, and theory of geomagnetic storms became classical works of modern cosmophysics. Yuri authored several monographs and more than 200 scientific papers.

Yuri was a scientific leader, a model to match for his institute's colleagues. For many years, he used to be a chair of the scientific workshop at PGI and a chairman of the program committee of the Apatity Seminar "Physics of auroral phenomena". Yuri always noted a great importance and paid specific attention to his work with the young scientists and students. He was a professor at the Kola Branch of Petrozavodsk State University, where he led a course of lectures in physics of electromagnetic waves in plasma, and guided students.

Yuri Maltsev was well known by his public activities as one of the informal leaders of a democratic movement in Apatity and Murmansk.

Yuri left us in a cusp of his life, full of plans and expectations. The memory of Yuri Pavlovich Maltsev will long live in the hearts of his relatives, friends and colleagues.

---

## Kendall Svendsen

Geomagnetism has lost a good friend and advocate, Kendall Svendsen, who was a long-time employee in NOAA and its predecessor agencies, passed away in July. He was 86 years old. Kendall was Chief of the Geomagnetism Division of the Coast and Geodetic Survey and the first Chief of the Solid Earth Geophysics Division of NGDC when NOAA was established. Kendall was instrumental in the development of the IAGA Magnetic Observatory 3-Letter Code and a strong supporter of the observatory network worldwide. He lived in Boulder until his retirement and then moved to Silver Spring, Maryland.

Kendall was a good man and will be missed.

## Susan McLean

---

## Harry C. Koons, 1942-2005

We are saddened to report that Harry C. Koons, a pioneer in space weather and its effects on spacecraft, died on May 11, 2005 at age 63. Harry was a Distinguished Scientist in the Space Science Applications

Laboratory of the Aerospace Corporation in Los Angeles.

He was born and raised in McKeesport, Pennsylvania and received both a bachelor's degree in physics, and a Ph. D. in geophysics from MIT. Shortly thereafter, in 1968 he joined the Plasma Physics Laboratory at the Aerospace Corporation. When the plasma lab disbanded a few years later, Harry transferred to the Space Science Applications Laboratory.

Harry's scientific work covered an extremely wide range. His initial fields of specialization included magnetospheric physics with a special focus on very-low-frequency wave propagation, wave-particle interactions, and active experiments in space. For example, he was the first to report satellite observations of the triggering of whistler-mode chorus wave emissions from pre-existing hiss emissions. He was a Principal or Co-Investigator for over a dozen space flight experiments mostly involving plasma wave receivers. These included STEP-M1, CRRES, AMPTE/IRM, S3-3, OV1-14, OV2-5, OV2-2, OV1-21, and OV3-3.

In the 1970's he became interested in the effects of the environment on spacecraft, particularly spacecraft charging. He was Principal Investigator for the Surface Potential Monitor, Pulse Analyzer, Plasma Wave Receiver and HF Receiver on the SCATHA (Spacecraft Charging at High Altitudes) mission. These observations proved that charging was a real phenomenon, and provided the understanding needed to mitigate this hazard to space systems. Harry used this knowledge to great benefit for spacecraft design specifications and the analysis of on-orbit anomalies.

In recent years Harry was involved in assessing the lightning protection and triboelectric charging of launch vehicles, the generation of radio waves by seismic activity, and the enhancement of audio recordings. He pioneered the use of expert systems, neural networks, and the application of the statistics of extreme values in areas related to the space environment, spacecraft charging and lightning. His neural network model of the geosynchronous relativistic electron flux is still in wide use in the space weather community.

Harry brought an amazing amount of enthusiasm and energy into everything he did. His positive attitude and infectious sense of humor served as an example to us all. Most of all we will miss his distinctive laughter booming down the hall.

Harry is survived by his wife, Ann, two children and a grandson.

**Jim Roeder, Margaret Chen and Joe Fennell**

---

# General Information about IAGA

The International Association of Geomagnetism and Aeronomy is one of the seven Associations of the International Union of Geodesy and Geophysics [\[IUGG\]](#).

The other IUGG Associations are:

International Association of Geodesy [\[IAG\]](#)

International Association of Hydrological Sciences [\[IAHS\]](#)

International Association of Meteorology and Atmospheric Sciences [\[IAMAS\]](#)

International Association for the Physical Sciences of the Oceans [\[IAPSO\]](#)

International Association of Seismology and Physics of the Earth's Interior [\[IASPEI\]](#)

International Association of Volcanology and Chemistry of the Earth's Interior [\[IAVCEI\]](#)

---

## IAGA's Mission

The overall purpose of IAGA is set out in the first statute of the Association:

a) to promote studies of magnetism and aeronomy of the Earth and other bodies of the solar system, and of the interplanetary medium and its interaction with these bodies, where such studies have international interest;

b) to encourage research in these subjects by individual countries, institutions or persons and to facilitate its international coordination;

c) to provide an opportunity on an international basis for discussion and publication of the results of the researches; and

d) to promote appropriate standardizations of observational programs, data acquisition systems, data analysis and publication.

(Link to the complete IAGA [Statutes and By-Laws](#).)

---

## Scientific Assemblies

IAGA holds an Ordinary General Assembly every four years in conjunction with each Ordinary General Assembly of IUGG. Between the General Assemblies, IAGA holds a Scientific Assembly, often meeting with one of the other Associations of IUGG.

---

## Participation in IAGA Activities

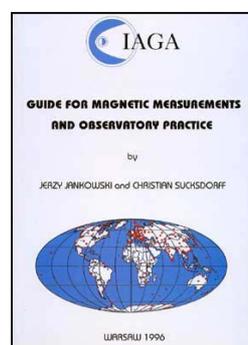
IAGA welcomes all scientists throughout the world to join in research into Geomagnetism and Aeronomy. IAGA is subdivided into a number of Divisions and

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 and many maintain their own web sites. At the IAGA Assemblies, the groups organize specialist symposia, invite scholarly reviews and receive contributed papers that present up-to-the-minute results of current research. The IAGA web site gives, or provides links to, information on the range of IAGA activities.

---

## IAGA Guides

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



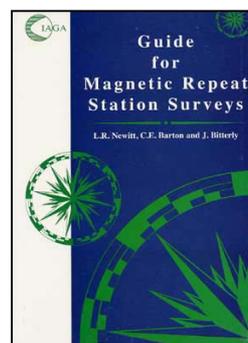
***IAGA Guide for Magnetic Measurements and Observatory Practice*** by J Jankowski and C Sucksdorff, 1996

232 pages  
ISBN: 0-9650686-2-5  
Price: USD 50

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

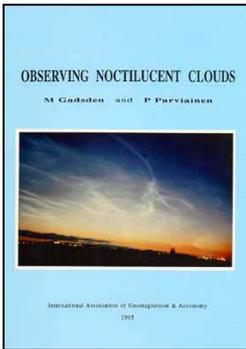
- A brief description of the magnetic field of the Earth
- Selection of observatory sites and layout
- Magnetometers
- Absolute magnetic measurements
- Recording of magnetic variations
- Data processing
- Testing and calibrating instruments

***IAGA Guide for Magnetic Repeat Station Surveys*** by L.R. Newitt, C.E. Barton, and J. Bitterly, 1997



120 pages  
ISBN: 0-9650686-1-7  
Price: USD 25

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



**IGAGuide to Observing Noctilucent Clouds** by M Gadsden and P Parviainen, 1995

ISBN: 0-9650686-0-9  
Price: USD 25

This manual and instruction book was written by a group of active researchers, both professional and amateur.

There are chapters giving practical advice for taking visual observations, photographing the clouds with film or with video equipment. A summary of observations from space is included, as well as comments on the connection between noctilucent clouds, seen from the ground, and the polar mesospheric clouds that so far have been measured only from orbit. Noctilucent clouds are seen in the summer months, shining in the poleward sky at nighttime. Measurements show that the clouds are higher than any others. Lying at a height of 80-85 kilometres, the clouds mark a boundary between meteorology and space physics.

This book is beautifully illustrated with photographs, and will help everyone recognize and appreciate these "sailors in the summer night."

*(This guide is currently out of print. A new edition is planned for 2006.)*

### IGAG News

IGAG News contains items of general interest to the IAGA community. Beginning with Issue 40, the main method of distribution for IAGA News has been via the IAGA web site. If printed copies are required a request should be made to the Secretary-General who will mail copies free of charge.

Requests to publish short articles, reports and announcements in IAGA News should be sent to the Secretary-General.

### Meetings Calendar

A calendar of scientific meetings relevant to the interests of IAGA scientists is maintained at:

<http://www.ufa.cas.cz/html/conferences/iaga.html>

### International Geophysical Calendar

The International Geophysical Calendar for 2006 is available for download, as a *pdf* file at the following address:

[ftp://ftp.ngdc.noaa.gov/STP/SOLAR\\_DATA/IGC\\_CALENDAR/2006/](ftp://ftp.ngdc.noaa.gov/STP/SOLAR_DATA/IGC_CALENDAR/2006/) (Link to [IGC 2006](#))

The 2005 calendar may be viewed at the ISES web site: <http://www.ises-spaceweather.org/>

### The IAGA Web site

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

### IGAG Flyer

A flyer (English version) summarising IAGA scientific interests and activities can be downloaded in *pdf* format from the IAGA web site by clicking on the image below (718kb):



[French](#) and [Spanish](#) versions are also available.

### Contacting IAGA

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

### Prof Bengt Hultqvist

The Swedish Institute of Space Physics, Box 812  
S-98128 Kiruna, Sweden  
email: [hultqv@irf.se](mailto:hultqv@irf.se)