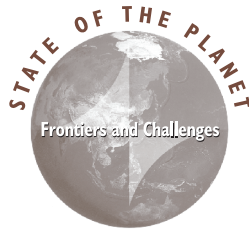




XXIII General Assembly of the International Union of Geodesy and Geophysics

IUGG 2003
Sapporo Japan

June 30 - July 11, 2003
Sapporo, Japan



Comptes Rendus



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IUGG XXIII GENERAL ASSEMBLY

30 June – 11 July 2003 Sapporo, Japan

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PART I

Proceedings of the General Assembly

OFFICERS OF THE UNION, ASSOCIATIONS, AND COMMISSIONS

OFFICERS OF THE UNION FOR 1999-2003

Bureau of the Union

<i>President:</i>	Masaru Kono	JAPAN
<i>Vice-President:</i>	Uri Shamir	ISRAEL
<i>Secretary General:</i>	Jo Ann Joselyn	USA
<i>Treasurer:</i>	Aksel W. Hansen	DENMARK
<i>Members:</i>	Junyung Chen	CHINA
	Harsh Gupta	INDIA
	Tom Beer	AUSTRALIA

The following Officers are not voting Members of the Bureau:

<i>Assistant Secretary General:</i>	Ryan F. Aucone	USA
<i>Assistant Treasurer:</i>	Anders Svensson	DENMARK
<i>Honorary Secretary General:</i>	Baron P. Melchior	BELGIUM

Executive Committee of the Union

According to Article 10 of the Statutes of IUGG the Executive Committee consists of:

- the Bureau (see above),
- the Retiring President of the Union, M. Kono (JAPAN)
- the Presidents of the International Associations:
 - IAG:* Fernando Sanso ITALY
 - IAGA:* David. J. Kerridge UNITED KINGDOM
 - IAHS:* Kuniyoshi Takeuchi JAPAN
 - IAMAS:* Huw Davies SWITZERLAND
 - IAPSO:* Paola Rizzoli ITALY/USA
 - IASPEI:* Brian L.N. Kennett AUSTRALIA
 - IAVCEI:* Steve Sparks UNITED KINGDOM

Finance Committee of the Union

<i>Chair:</i>	A. Fred Spilhaus	USA
<i>Secretary</i>	Patrick Pinet	FRANCE
<i>Members:</i>	Vinod K. Gaur	INDIA
	Erwin Groten	GERMANY
	Michael J. Hamlin	UNITED KINGDOM

Secretaries General of the International Associations

<i>IAG:</i>	C. Christian Tscherning	DENMARK
<i>IAGA:</i>	Bengt Hultqvist	SWEDEN
<i>IAHS:</i>	Pierre Hubert	FRANCE
<i>IAMAS:</i>	Roland List	CANADA
<i>IAPSO:</i>	Fred Camfield	USA
<i>IASPEI:</i>	E. Robert Engdahl	USA
<i>IAVCEI:</i>	Steve McNutt	USA

Inter Associations Committee on Mathematical Geophysics:

<i>Chair:</i>	Daniel H. Rothman	USA
<i>Vice-Chair– Russia:</i>	George Molchan	RUSSIA
<i>Vice-Chair – North America:</i>	Ray Pierrehumbert	USA
<i>Vice-Chair– Europe:</i>	Antonello Provenzale	ITALY
<i>Vice-Chair – Middle East:</i>	Eli Tziperman	ISRAEL
<i>Secretary:</i>	Marc Spiegelman	USA

Inter Associations Committee on the Study of Earth's Deep Interior (SEDI):

<i>Chair:</i>	David Gubbins	UNITED KINGDOM
<i>Vice-Chair:</i>	Henri-Claude Nataf	FRANCE
<i>Secretary General:</i>	Mike Bergman	USA

Inter Associations Commission on Geophysical Risk and Sustainability (GeoRisk):

<i>Chair:</i>	Tom Beer	AUSTRALIA
<i>Vice-Chairs:</i>	Kuniyoshi Takeuchi	JAPAN
	Alik Ismail-Zadeh	RUSSIA
<i>Secretary:</i>	Grant Heiken	USA

IUGG Liaison Officers With Intergovernmental Organizations*United Nations Educational, Scientific and Cultural Organization (UNESCO):*

<i>Solid Earth & Geodesy:</i>	Pierre Hubert	FRANCE
<i>Int. Oceanographic Commission:</i>	Paola Rizzoli	ITALY/USA

Cartographic Office of the United Nations:

Juhani Kakkuri	FINLAND
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3

World Meteorological Organization (WMO):

Roland List	CANADA
Pierre Hubert	FRANCE

IUGG Representatives on ICSU Committees*Federation of Astronomical and Geophysical Data Analysis Services (FAGS):*

Martine Feissel	FRANCE
David T. Pugh	UNITED KINGDOM

Committee on Space Research (COSPAR):

Eigil Friis-Christensen	DENMARK
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Committee on Science and Technology in Developing Countries - incorporating International Biosciences and other Scientific Networks (COSTED/IBN):

Vinod K. Gaur	INDIA
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Scientific Committee for the International Geosphere-Biosphere Programme (IGBP):

C.J.E. Schuurmans	NETHERLANDS
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Scientific Committee on Antarctic Research (SCAR):

Roland Schlich	FRANCE
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Scientific Committee on the Problems of the Environment (SCOPE):

Norman Jake Peters	USA
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Scientific Committee on Oceanic Research (SCOR):

<i>President IAMAS:</i>	Huw C. Davies	SWITZERLAND
<i>President IAPSO:</i>	Paola Rizzoli	ITALY/JAPAN

Scientific Committee on Solar-Terrestrial Physics (SCOSTEP):

Wolfgang Baumjohann	AUSTRIA
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World Climate Research Programme (WCRP):

Roland List	CANADA
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IUGG Representatives on Inter-Union Commissions*Inter-Union Scientific Committee on the Lithosphere (SCL/ILP):*

Soren Gregersen	DENMARK
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IUGG Representatives on Other Bodies*International Civil Aviation Organization (ICAO):*

Grant Heiken	USA
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Instituto Panamericano de Geografia e Historia (IPGH):

Wolfgang Torge	GERMANY
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ORGANISING COMMITTEES FOR THE 23RD GENERAL ASSEMBLY

IUGG 2003 Organising Committee

Dr.	Seiya Uyeda Chair of the Organizing Committee Director, Earthquake Prediction Research Center Tokai University
Dr.	Kiyoshi Suyehiro Secretary of the Organizing Committee Deep Sea Research Department JAMSTEC
Professor	Atsuhiko Nishida Chair of the Scientific Programme Committee Japan Society for the Promotion of Science
Dr.	Masataka Kinoshita Local Organizing Committee, General Affairs Deep Sea Research Department JAMSTEC
Dr.	Hisao Ito Local Organizing Committee, Finance Geological Survey of Japan
Professor	Shigeto Watanabe Local Organizing Committee, Meeting Rooms Faculty of Science Hokkaido University
Professor	Mitsuharu Shiiba Local Organizing Committee, Exhibition Faculty of Engineering Kyoto University
Professor	Noriyuki Hibiya Local Organizing Committee, Registration Graduate School of Science The University of Tokyo
Professor	Jim Mori Local Organizing Committee, Program Disaster Prevention Research Institute Kyoto University
Professor	Minoru Kasahara Local Organizing Committee, Special Events Hokkaido University
Professor	Hisashi Utada Local Organizing Committee, Public Relations Earthquake Research Institute The University of Tokyo
Professor	Tadahide Ui Local Organizing Committee, Field Trips Graduate School of Science Hokkaido University
Dr.	Akimasa Sumi Local Organizing Committee, IT Infrastructure Center for Climate Systems Research The University of Tokyo

IUGG National Committee for Japan

Professor	Kojiro Irikura Chairperson, National Committee Disaster Prevention Research Institute Kyoto University
Professor	Kimio Hanawa Secretary, National Committee IAPSO National Correspondent Department of Geophysics Graduate School of Science Tohoku University
Professor	Shuzo Takemoto IAG National Correspondent Department of Geophysics Graduate School of Science Kyoto University
Professor	Yohsuke Kamide IAGA National Correspondent Solar-Terrestrial Environment Laboratory Nagoya University
Professor	Michiharu Shiiba IAHS National Correspondent Department of Civil Engineering Systems Graduate School of Engineering Kyoto University
Professor	Hideji Kida IAMAS National Correspondent Department of Geophysics Graduate School of Science Kyoto University
Professor	Mitsuhiro Matsu'ura IASPEI National Correspondent Department of Earth & Planetary Science Graduate School of Science The University of Tokyo
Professor	Kiyoshi Nakazawa IASPEI National Correspondent Department of Earth & Planetary Sciences Graduate School of Science & Engineering Tokyo Institute of Technology
Professor	Toshitsugu Fujii IAVCEI National Correspondent Earthquake Research Institute The University of Tokyo

REPORT OF THE CHAIR OF THE LOCAL ORGANISING COMMITTEE PROF. SEIYA UYEDA

The 23rd General Assembly of the International Union of Geodesy and Geophysics (IUGG) was held from June 30 (Mon) to July 11 (Fri), 2003 in Sapporo, Hokkaido, Japan. The Royton Sapporo Hotel, the Hokkaido Kosei Nenkin Kaikan, the Sapporo Education and Culture Hall and the Sapporo Media Park were the venue of the Assembly, all in close proximity of the Odori Park which is a symbol of the City of Sapporo.

Over 4,500 participants from 79 countries and regions gathered in this city of cultural as well as social-economic-political center of northern Japan. There were 7,121 abstract submissions and 5,137 of them were actually delivered. It is a great pleasure of the LOC to have been able to financially support the attendance of 497 participants, mainly young scientists from countries in need.

This General Assembly marked the first one held in Asia in the history of IUGG. It was characterized by the central theme, "State of the Planet: Frontiers and Challenges". All the scientific sessions including six Union symposia under this theme, i.e., Forecasting, Prediction and Predictability; Volatiles in Volcanic Arcs: From Slab to Stratosphere; Earth Systems and Global Change; Geophysical Risk and Sustainability on a Crowded Planet; Structure and Dynamics of the Earth's Interior and New Sensors of Our Planet: What is Possible were held very successfully. For all of those who were involved in hosting the General Assembly, warm compliments from many participants not only on the level of attendance and organization but also on the highest standards of the science presented were immense contentment.

The Welcome Ceremony was held on July 2 in the presence of Their Majesties the Emperor and Empress and received a speech from His Majesty the Emperor. A welcome message from the Prime Minister was read, and a speech was delivered by the Parliamentary Secretary for Education, Culture, Sports, Science and Technology. We were gratified by expressions of admiration to His Majesty the Emperor's speech from many of the audience afterwards. The Hokkaido University Orchestra gave a welcome performance.

The LOC had planned to carry out a strong outreach program for the citizens of Hokkaido. Thanks to the support by the IUGG participants, many programs were actually realized. They included a series of Public lectures by distinguished scientists, Science museum program all around Hokkaido, IUGG Citizens' College, and Round-the-Table discussion on global environment by junior high school students with IUGG participants as advisors.

Accompanying persons' programs, which included city sightseeing and Japanese culture experience, such as kimono dressing, cooking and tea ceremony, were also met with a highly favorable reception. The cooperation of the Sapporo Convention Bureau for these activities is greatly appreciated.

Exhibitions were held by 49 groups representing academic institutes from Japan and from abroad and related firms. We were pleased with the exhibitions of 17 Japanese research institutes covering the whole spectrum of earth and planetary sciences. Their Majesties the Emperor and Empress visited these exhibitions on July 2.

The threat of SARS epidemic was quite serious, resulting in having to unwillingly imposing some restrictions for participation from the areas of infection in accordance with recommendations of WHO and the Japanese government. We also had to trace everyone's health condition throughout the General Assembly. It was gratifying that the whole Assembly came to the end with no report on the SARS occurrence. The cooperation by every participant is gratefully acknowledged.

Financially, we feel fortunate to be able to report that the final account was not in the red. The total cost was about 350 million Yen and was covered by the registration and exhibition fees, funds from hosting scientific societies, exceptionally generous subsidiary funds from the Science Council of Japan, Hokkaido Prefecture and the City of Sapporo, as well as by donations from many individuals and private companies.

The success of the General Assembly indeed owes much to the leadership of the IUGG Headquarters, its seven Associations and the Scientific Program Committee, co-operation of the Science Council of Japan, and 16 scientific societies, Hokkaido Prefecture, the City of Sapporo, the Sapporo Convention Bureau, the Royton Sapporo Hotel, the International Convention Service, and many volunteers. It was also supported by the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Economy, Trade and Industry, NHK (Japan Broadcasting Corporation), and the Japan Marine Science and Technology Agency (JAMSTEC). The contribution of JAMSTEC was literally essential as it housed the LOC Secretariat for almost six years.

The IUGG General Assembly in 2007 will go to Perugia, Italy. We will be happy to provide the LOC in Italy with any information useful for organizing the next General Assembly.

REPORT OF THE CHAIR OF THE SCIENTIFIC PROGRAMME COMMITTEE PROF. ATSUHIRO NISHIDA

A major new element of the 23rd IUGG General Assembly was the Union Lectures and Symposia under the unifying theme of "The State of the Planet: Frontiers and Challenges." Four Union Lectures were given from 8:00 to 9:00 on Tuesday and Thursday of the first week and on Monday and Wednesday of the second week where no parallel sessions were scheduled. Six of the Eight Union Symposia were organized under this theme. These Lectures and Symposia demonstrated the cutting edge and relevance of geophysical sciences and identified the key challenges of the future. In so doing they confirmed that there is a common thread across research conducted in different Associations of IUGG and stimulated interactions among them. These sessions were well attended and active exchanges followed each presentation. A commemorative book that will give a coherent vision of the State of the Planet is being assembled with contributions from many of the speakers.

Prior to the Assembly the Science Program Committee met three times; in August and December, 2001 and March 2002. At the very beginning of the first meeting some SPC members rose to order on the ground that non-members (which meant Presidents of the Associations) were present, but it was confirmed that these non-members could attend the SPC meeting as observers. Arrangement for the "The State of the Planet" sessions needed particular attention, as this was the first time such theme sessions were held. Other sessions proposed by each Association were modified or combined wherever such was desirable and feasible, and a lead Association was chosen for each Inter-Association Symposia. Times and places of the sessions were assigned according to the matrix provided by the LOC. All the posters were presented in a single meeting facility. It was decided that a person can be the first author of three contributed papers at the maximum counting both oral and poster papers.

Ultimately, 182 Symposia were arranged during 11 days as follows:

Union Lectures	4
Union Symposia	8
Inter-Association	59
IAG	7
IAGA	45
IAHS	2
IAMAS	24
IAPSO	6
IASPEI	8
IAVCEI	9

There were 7121 abstracts submitted to the Scientific Programme including rejected and cancelled abstracts; 5137 were presented including 2737 posters.

For every scientific assembly, there are persons who need financial assistance in order to travel to the meeting. The Local Organizing Committee (LOC), chaired by S. Uyeda, raised 50 Million yen to assist scientists to attend the Sapporo General Assembly. Counting all sources, the amount of money available for travel assistance exceeded \$630,000, which is the most ever raised for a General Assembly. There were more than 1150 applicants for assistance; 440 individuals claimed travel assistance grants in Sapporo. Selection of scientists for travel grants was made by the Chair of the SPC for the Union Symposia but was delegated to each Association for other sessions. A unified database of grant applications and awards was maintained by the LOC. While all awards were used to enhance the scientific quality of the symposia and the Assembly, priority was given to persons from economically disadvantaged countries, especially women and young scientists. An agreement was reached among the SPC members regarding allocation of the travel funds. Generally, funds were prorated among the Associations based on the number of persons who pre-registered for each Association. However, half of the funds were used to encourage participation in the Union and inter-Association symposia, prorated by the number of abstracts submitted to each symposium.

I thank Prof. R.S.J Sparks for organizing the State of the Planet Session that was the highlight of the 23rd IUGG. Hard work and collaboration of the members of SPC should be highly complimented. We are deeply indebted to the program subcommittee of the LOC (Prof. J. Mori, Chair) for their dedicated efforts in allocating the facilities to the sessions and handling daily changes of the program.

LIST OF LECTURES AND SYMPOSIA

HELD AT THE 23RD GENERAL ASSEMBLY OF THE INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS

UNION LECTURES

- UL1 From Weather Prediction to Global Change Projection (Taroh Matsuno, Japan)
- UL3 The Impact of Human Activities on the Atmosphere (Mario J. Molina, USA)
- UL5 Modeling of the Earth's Dynamo (Gary A. Glatzmaier, USA)
- UL6 The Gravity Field of the Earth Determined by New Satellite Missions (Christoph Reigber, Germany)

UNION SYMPOSIA

- U1 Forecasting, Prediction and Predictability
- U2 Volatiles in Volcanic Arcs: From Slab to Stratosphere
- U3 Earth Systems and Global Change
- U4 Geophysical Risk and Sustainability on a Crowded Planet
- U5 Structure and Dynamics of the Earth's Interior
- U6 New Sensors of our Planet. What is Possible?
- U7 History of IUGG
- U8 Geosciences: The Future (GTF)

INTER-ASSOCIATION SYMPOSIA AND WORKSHOPS

- JSG01 Secular, Transient and Periodic Crustal Movements and Their Geophysical Implications (IAG, IASPEI)
- JSG02 Interdisciplinary Earth Science From Improved Gravity Field Modeling (IAG, IAHS, IAPSO, IASPEI)
- JSG03 Interdisciplinary Science From Remote Sensing - Radar Altimetry, ATSR, SAR, Ocean Color and Other Sensors (IAG, IAHS, IAPSO, IASPEI, ISPRS)
- JSA01 Long-Term Trends in the Mesosphere, Thermosphere and Ionosphere (IAGA, IAMAS)
- JSA02 External Forcing on the Middle Atmosphere and Ionosphere (IAGA, IAMAS)
- JSA03 Equatorial Middle Atmosphere-Thermosphere-Ionosphere Dynamics and Energetics (IAGA, IAMAS, SCOSTEP)
- JSA06 Seismo-, Volcano- and Tectono-Electromagnetic Effects (IAGA, IASPEI, IAVCEI)
- JSA07 Regional Crustal Models Based on Seismic, Electromagnetic, Potential Field and Geothermal Studies (IAGA, IASPEI)
- JSA08 Effects of Solar Variability on Climate Change (IAGA, IAMAS)
- JSA09 Challenges of Global Change in Forcing From Below and Above (IAGA, IAMAS)
- JSA10 Electromagnetic Imaging and Monitoring of Volcanoes and Active Faults (IAGA, IASPEI, IAVCEI)
- JSA11 Twenty Years of the Ocean Drilling Program (IAGA, IAMAS, IAPSO, IASPEI, IAVCEI)
- JSH01 The Remote Sensing of the Cryosphere (IAHS [ICSI, ICRS], IAMAS, IAPSO)
- JSH02 Groundwater and Volcanoes (IAHS/ICGW, IAVCEI)
- JSH03 Quantitative Approaches to Hyporheic Flows and Their Biogeochemical Consequences in Marine, Estuarine and Freshwater Systems (IAHS, ICWQ)
- JWH01 Snow Processes: Representation in Atmospheric and Hydrological Models (IAHS/ICSI, IAMAS)
- JWH02 The Role of GEWEX Hydrometeorological Science in Improved Water Resources Management (IAHS, IAMAS)
- JSM01 Toward High Resolution Climate Models and Earth System Models (IAMAS, IAPSO)
- JSM02 The Surface Ocean-Lower Atmosphere Study (IAMAS [ICACGP, ICPM], IAPSO)
- JSM03 Land-Ocean-Atmosphere Interactions in the Coastal Zone (IAMAS, IAPSO, IAHS)
- JSM04 Terrestrial Ecosystems, Atmospheric Composition, Climate (IAMAS, IAGA)
- JSM05 Solar Effects in the Middle Atmosphere and Ionosphere (IAMAS [ICMA/IRC], IAGA, SCOSTEP)
- JSM06 Layered Phenomena Near the Mesopause (IAMAS [ICMA], IAGA)
- JSM07 Application of GPS Techniques in the Atmosphere (IAMAS [ICMA], IAGA, IAG)
- JSM08 Energetics and Circulation of the MLT Region and its Coupling With Circulation and Chemistry of the Thermosphere and Stratosphere (IAMAS [ICMA, ICACGP], IAGA)
- JSM09 Intense Vortices From the Small Scale to the Planetary Scale (IAMAS [ICDM], IAPSO)
- JSM10 Cryosphere-Climate Interactions (IAMAS [ICCI, ICPM], IAPSO, IAHS)
- JSM11 Global Sea Level Rise, Global Climate Change and Polar Ice Sheet Stability (IAMAS [ICDM, ICCI, ICPM], IAPSO, IAG, IAHS)
- JSM12 The Treatment of Precipitation in Cloud and Climate Models (IAMAS [ICCP, ICCI], IAHS)
- JSM13 Data Assimilation for Atmospheric and Oceanic Processes (IAMAS [ICDM, ICCP], IAHS, IAPSO, IAGA, IAG, SPARC)
- JSM14 Dynamics and Predictability of Severe Weather Events (IAMAS [ICDM, ICCP], IAHS)
- JSM15 Special Nakaya-Magono Celebration: The Growth of Ice Crystals and Snow (IAMAS [ICCP, ICPM], IAHS)
- JSM16 The Role of Atmospheric Processes in Mass Balance Exchange in the Polar Regions (IAMAS [ICPM, ICDM], IAHS)
- JSM17 Mixing and its Parameterization in Geophysical Fluids (IAMAS, IAPSO, IAHS)
- JSM18 Measurement and Distribution of Precipitation (IAMAS [ICCP, ICPM], IAHS)
- JWM01 Water and Energy Budget Workshop (IAMAS, IAHS)

- JSP01 The Decadal to Centennial Variability of the Ocean and Atmosphere (IAPSO, IAMAS, CLIVAR)
JSP02 New Perspectives of Coupled Tropical Ocean-Atmosphere Dynamics and Predictability (IAPSO, IAMAS, CLIVAR)
JSP03 Groundwater Inputs to the Ocean (IAPSO, IAHS)
JSP04 Arctic Environment Change (IAPSO, IAMAS, IAHS)
JSP05 Worldwide Sea Level Change (IAPSO, IAG)
JSP06 The Global Ocean Observing System (IAPSO, IAG, IOC)
JSP07 The Coastal Ocean Observing System (IAPSO, IAG, IOC)
JSP08 Coastal Processes and Storm Surges (IAPSO, IAMAS, LOICZ [IGBP])
JSP09 Physical Aspects of Air-Sea Interaction (IAPSO, IAMAS)
JSP10 Rotating and Stratified Fluids (IAPSO, IAGA, IAMAS, SEDI)
JSP11 Geophysical Risk and Vulnerability: The Population-Hazard Interaction (IAPSO, IAGA, IAHS, IAMAS, IASPEI, IAVCEI)
JSS01 Hagiwara Symposium on Monitoring and Modeling of Earthquake and Volcanic Processes for Prediction (IASPEI, IAVCEI, IAG, IAGA)
JSS02 Recent Destructive Earthquakes (IASPEI, IAG)
JSS03 Long-Term in-situ Ocean Observatories and Observations (IASPEI, IAG, IAGA, IAPSO, ION)
JSS04 Thermally Controlled Processes Within the Earth (IASPEI, IAVCEI, IAGA, IAPSO, IAMAS, IAHS)
JSS05 Physics and Chemistry of Earth Materials (IASPEI, IAVCEI, IAGA)
JSS06 Earth Structure and Geodynamics (IASPEI, IAVCEI, IAG, IAGA)
JSS07 Tsunamis: Their Science, Engineering and Hazard Mitigation (IASPEI, IAVCEI, IAPSO)
JWS01 Is Short-Term Earthquake Prediction Possible? (IASPEI, IAVCEI, IAG, IAGA)
JWS04 Subsurface Thermal Signatures of Tectonics, Hydrogeology and Paleoclimate (IASPEI, IAVCEI, IAGA, IAPSO, IAMAS, IAHS)
JSV02 Volcanism and the Earth's Atmosphere (IAVCEI, IAMAS)
JSV03 Flood Basalt Volcanism (IAVCEI, IASPEI)
JSV04 Recent Advances in Quantitative Volcano Seismology (IAVCEI, IASPEI)

ASSOCIATION SYMPOSIA AND WORKSHOP

International Association of Geodesy (IAG)

- G01 Positioning. Meeting of IAG Section I
G02 Advanced Space Technology. Meeting of IAG Section II
G03 Determination of the Gravity Field. Meeting of IAG Section III
G04 General Theory and Methodology. Meeting of IAG Section IV
G05 Geodynamics. Meeting of IAG Section V
G06 Insight Into Earth System Science: Variations in the Earth's Rotation and its Gravity Field. Meeting of Section III + V
G07 Global Geodetic Observing System. IAG Symposium

International Association of Geomagnetism and Aeronomy (IAGA)

- GAI.01 Extraterrestrial Rock Magnetism and the Origin of Remanence in the Solar System
GAI.02 Natural Magnetic Minerals: Magnetic Properties, Chemistry and Evolution
GAI.03 Rock Magnetism: Theory, Experiments and Models (IAGA, ICMA)
GAI.04 Methods and Approaches in Paleomagnetism (Poster Session)
GAI.05 Observational Constraints on Field Behavior: (Paleo) Secular Variation, Paleointensity, Reversal Frequency and Age Dating (SEDI)
GAI.06 Paleomagnetism and Fabrics: Regional and Global Geodynamical Challenges
GAI.08 Conductivity of Crust and Mantle: Relation to Geodynamics (SEDI)
GAI.09 Electrical and Electromagnetic Studies in Geothermally Active Regions
GAI.10 Electromagnetic Inversion Modeling
GAI.11 Geodynamo, Theories and Experiments (SEDI)
GAII.01 Ionosphere-Thermosphere-Magnetosphere Coupling
GAII.02 Dynamics, Energetics and Structure of the Mesosphere-Thermosphere-Ionosphere Region
GAII.03 Measurement Techniques in the Middle/Upper Atmosphere and Ionosphere (IAGA, ICMA)
GAII.04 Lightning-Induced Transient Processes in the Middle and Upper Atmosphere and Their Impact on the Earth System
GAII.05 Data Assimilation Techniques for the Ionosphere-Thermosphere-Magnetosphere System
GAII.06 Ionospheric Irregularities, Fields and Waves
GAII.07 Aeronomy of Planetary Atmospheres Including Comparative Atmospheres
GAIII.01 What are the Causes and Mechanisms for Particle Acceleration Associated with Aurora?
GAIII.02 What Role do Waves Play in Transport and Acceleration of Ring Current and Radiation Belt Particles?
GAIII.03 How, When, Where, and Why Does Magnetic Reconnection Occur?
GAIII.04 What are the Structures and Dynamics of the Magnetopause and its Boundary Layers?
GAIII.05 What are the Structures in the Magnetotail, Why are They There, and How do They Influence its Dynamics
GAIII.06 How is the Inner Magnetosphere Dynamically Coupled to Other Regions of Geospace?
GAIII.07 What is the Role of Non-Linear Processes and Complex System Dynamics in Determining Magnetospheric Behavior?
GAIII.08 What is the Life-History of Particles in the Magnetospheric Regions?
GAIII.09 How Does Energy Flow From the Solar Corona through the Magnetospheric Regions?

- GAIII.10 How can we use Waves as Diagnostic Probes for Space Weather Studies?
 GAIII.11 How do Spacecraft Interact With Their Space Environment?
 GAIII.12 How Does Multi-Point Monitoring Probe Multiple Spatial and Temporal Scales in the Magnetosphere?
 GAIII.13 Reporter Reviews
 GAIII.14 How do the Magnetospheres of Other Planets and Their Satellites Compare With the Earth's Magnetosphere?
 GAIV.01 The Dynamic Sun, its Atmosphere and Wind
 GAIV.02 Coupling Complexity in the Heliosphere
 GAIV.03 Mars: Magnetism and Interaction With the Solar Wind
 GAIV.04 Reporter Reviews
 GAV.01 Global Geomagnetic Observatory: Towards a Better Network of Geomagnetic Observations
 GAV.02 Geomagnetic Indices: Real-Time Production and Forecasting
 GAV.03 The Geospace Environment in Near-Real Time: Science and Technology (Division V lead, joint with Division III, Interdivisional WG on Polar Research, and CEOS)
 GAV.04 International Decade of Geopotential Field Research: First Five Years - Advances in the Understanding the Geomagnetic Field (SEDI)
 GAV.05 Modeling the Earth's Magnetic Field on Global and Regional Scales (SEDI)
 GAV.06 Modern Magnetic Surveys for Regional Tectonics, Geohazards and Environmental Investigations
 GAV.07 Magnetic Anomalies and Rock Properties
 GADC.01 Low Latitude and Equatorial Electrojet Studies From Ground and Satellite Magnetic Data
 GADC.02 Space Weather Effects at Equatorial and Low Latitude
 GAH.01 Historical Events and People in Aeronomy, Geomagnetism and Geophysics

International Association of Hydrology (IAHS)

- HS01 Erosion Prediction of Ungauged Basins (PUBS): Integrating Methods and Techniques (ICCE, ICRS and all IAHS Commissions)
 HS02 Water Resources Systems: Global Change, Risk Assessment and Water Management (ICWRS, ICASVR, ICSW, ICWQ)
 HS03 Weather Radar Information and Distributed Hydrological Modeling (ICSW)
 HS04 Methodologies for Risk Assessment of Waste Water Re-Use on Groundwater Quality (ICWQ)
 HW01 Effects of Human Activities on Hydrological and Biogeochemical Cycles (ICWQ)
 HW02 Stream Temperature Changes and Effects (ICWQ)
 HW03 Quality Assurance in Hydrological Research (ICWQ, ICSW, ICGW, ICWR, ICASVR, ICCE)
 HW04 Systems Modeling of Global Water Dynamics (ICWRS)
 HW05 Groundwater Resources for Emergency Situations (ICGW)
 HW06 Isotope Tracers in Water Cycle Models (IAHS/ICT, IAEA)
 HW07 Towards a Science Program for Prediction in Ungauged Basins (All IAHS Commissions)
 HW08 Parameter Estimation Techniques (IAHS/WMO Working Group on GEWEX With the Support of ICSW and ICASVR)

International Association of Meteorology and Atmospheric Sciences (IAMAS)

- MI01 Variation of the Solar Energy Output and its Influence on Climate (IRC, ICCI, ICACGP)
 MI02 Clouds, Aerosols, Radiation and Climate Symposium (ICCP, IRC, ICACGP)
 MI03 Chemistry-Climate Interactions (Covers Ozone Interactions) (ICACGP, IOC, ICCI)
 MI04 Transfer of Trace Gases Across the Air-Sea Interface (ICACGP)
 MI05 Large Scale Patterns of Atmospheric Variability: Dynamics, Climate Impacts, and Role in Recent Climate Change (ICCI)
 MI06 The Dynamics of Mid-Latitude and Polar Weather Systems Over the Open Ocean (ICPM, ICDM)
 MI07 Climate Interaction at the Land-Atmosphere Interface
 MI08 Laboratory Studies on Atmospheric Issues (ICCP, ICACGP, IRC)
 MI09 New Instruments and Technology, Advances in Remote Sensing
 MI10 Modeling Pre-Holocene Climates (ICCI, IRC, ICACGP)
 MC01 Inter-Continental Transport and Global and Regional Impacts of Emissions of Atmospheric Trace Gases and Aerosols From Different Continents (ICACGP)
 MC02 Typhoons in Asia: Their Unique Features (ICDM)
 MC03 Dynamics and Variability of Monsoon Systems (ICDM)
 MC04 Planetary Atmospheres and Their Evolution (ICPAE)
 MC05 Middle Atmosphere Science (ICMA)
 MC06 Mesoscale Flow Regimes and Boundary Layer Processes (ICDM)
 MC07 Observational and Model Estimates of Climate Sensitivity (ICDM)
 MC08 Future Changes in Global and Regional Climate (ICDCI)
 MC09 Prospects for Limiting Climate Change by Sequestration and Deliberate Climate Modification (ICCI)
 MC10 Prospects for and Past Examples of Unexpected Nonlinearities, Thresholds, and Surprises in the Climate System (ICCI)
 MC11 Climate Model Evaluation: How Well do Models Represent Observations (ICCI)
 MC12 The Climate of the Holocene (ICCI)
 MC14 Detecting and Attributing the Early Signs of Human Influences on the Climate (ICCI)
 MC15 Long-Term Climate Variations (ICCI)

- MC16 Understanding and Predicting Decadal-Multidecadal Variations (ICCI)
MC17 Propagation Mechanisms for the Madden-Julian Oscillation (MJO) (ICDM)

International Association for the Physical Sciences of the Ocean (IAPSO)

- P01 Western Boundary Currents
P02 Marginal and Semi-Enclosed Seas and Their Exchange With the Open Ocean
P03 The Role of Tides, Mesoscale Processes, and Bottom Topography in Energy Transfer and Mixing
P04 Chemical and Isotopic Tracers in Ocean Circulation
P05 The Physical Oceanography of the Indian Ocean
P06 The Southern Ocean (SCOR, SCAR)

International Association of Seismology and Physics of the Earth's Interior (IASPEI)

- SS01 Seismological Observation and Interpretation
SS02 Seismic Sources: Modeling and Prediction
SS03 Tectonophysics and Crustal Structure
SS04 Strong Ground Motion, Earthquake Hazard and Risk
SS05 Education and Outreach
SW03 Lithospheric Structure of a Supercontinent: Gondwana
SW04 Effects of Earthquakes on Megacities
SW05 New Technologies and Geophysical Data Challenges

International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

- V05 Volcanic Flows: Observation, Experiment, and Theory
V06 Origins of Arc Magma
V07 Subaqueous Volcanism, Volcanogenic Sedimentation and Hydrothermal Systems
V08 Caldera Formation and Unrest
V09 Reassessing the Volcanic Plutonic Link
V10 Volcano Structure and Scientific Drilling
V11 Integrated Monitoring of Active Volcanoes
V12 Detecting Magma Chambers
V13 Assessing Volcanic Risk

XXIII IUGG GENERAL ASSEMBLY WELCOME CEREMONY**23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

The Welcome Ceremony of the 23rd General Assembly of the International Union of Geodesy and Geophysics was held in the evening of Wednesday 2nd July at the Sapporo Convention Center, Sapporo, commencing at 19:00. The speakers were introduced by Prof. Yohsuke Kamide, Vice-Chair of the Organizing Committee for IUGG2003.

Programme

Address by Prof. Seiya Uyeda, Chair of the IUGG2003 Local Organising Committee

Address by Prof. Hiroyuki Yoshikawa, President of the Science Council of Japan

Address by Prof. Masaru Kono, President of IUGG

Address by Dr. Jo Ann Joselyn, Secretary General of IUGG

Address by His Majesty The Emperor of Japan

Address by Ms. Yasuko Ikenobo, Parliamentary Secretary for Education, Culture, Sports, Science and Technology

Message from Mr. Junichiro Koizumi, Prime Minister of Japan

**ADDRESS BY PROFESSOR SEIYA UYEDA,
CHAIR OF THE IUGG2003 LOCAL ORGANISING COMMITTEE**

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Your Majesties the Emperor and Empress, Distinguished Guests, All Participants,

On behalf of the Local Organizing Committee of the Science Council of Japan and 16 Japanese geophysical societies, I would like to express my hearty welcome to you all.

The development of earth sciences in Japan owes greatly to the international exchange and cooperation, in which the IUGG has played the central role. For many years, we have benefited from participating in the General Assemblies and other meetings and in the various programs of the Union. We have been looking forward to hosting the IUGG General Assembly in Japan, - thus returning the hospitality extended to us in the past by other members of the Union. It is our great delight and honor that we now hold this Ceremony to welcome so many colleagues from all over the world to Sapporo.

On this happy occasion, we would like to thank all the organizations and individuals who have made this General Assembly possible. First, we thank the IUGG and the Scientific Program Committee for their excellent work. We are grateful to the Ministry of Education, Culture, Sport, Science and Technology, and all other cooperating organizations.

Our deep gratitude is due to the Hokkaido Government and the City of Sapporo, who supported us most generously. Coming closer to ourselves, I, as Chair of the LOC, cannot finish my endless list of thanks without mentioning all my fellow members serving on the LOC who have worked so hard over four years. Last but not the least gratitude goes from all of us to the Japan Marine Science and Technology Center. Without their support, we would not be here today.

As you may well be aware of, the economy in Japan is not in the best condition for supporting large international meetings like ours. Moreover, the recent threat of the SARS epidemic was of serious concern. It is our special joy to be here after successfully managing to clear these hurdles. Although what we offer you are far from luxurious, we sincerely wish that this meeting will promote the progress of our science, and international cooperation.

The present state of earth sciences strongly indicates the critical importance of enhancing international cooperation and developing interdisciplinary approaches to allow us to address many problems our planet earth faces in an effective and integrated manner. The main theme of this General Assembly "The state of the planet: Frontiers and Challenges" is a call for all of us to continue to work together. Many of my colleagues have been expressing the view that a unified body, a union, is urgently needed in Japan to bring all the geoscience communities together. This would allow us to better contribute to our efforts to further promote interdisciplinary research on a global scale. I share this view and sincerely wish that this once in a Century occasion may mark a significant milestone to this end.

The summer in Japan is notoriously hot and humid. However, Hokkaido is an exception. Moreover, as some of you might have already realized, in Hokkaido, people are friendly and the food is superb. Moreover, as people say "Sapporo, Munich, Milwaukee", this is the city known for beer. Although winter sports are not easy at this time, nature of Hokkaido is very inviting for many kinds of outdoor activities. On top of the intellectual yields from the scientific sessions, I hope you bring back home many happy memories of the people and natural habitat of Hokkaido.

Thank you very much for your attention.

ADDRESS BY PROFESSOR HIROYUKI YOSHIKAWA, PRESIDENT OF THE SCIENCE COUNCIL OF JAPAN

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Your Majesties the Emperor and Empress, Distinguished Guests, Ladies and Gentlemen:

Today it is our greatest honor and privilege to have Their Majesties the Emperor and Empress at this Welcome Ceremony of the 23rd General Assembly of the International Union of Geodesy and Geophysics. On behalf of the Science Council of Japan, it is also my great pleasure to express our sincere welcome to all of you.

The Science Council of Japan is a governmental organization representing Japanese scientists, covering all fields of cultural, social and natural sciences. The primary objective of the Council is to promote the development of scientific studies and to encourage the application of the fruits of such studies in the fields of governance, industry as well as the daily lives of the people.

Ever since its foundation in 1949, the Science Council of Japan, with a view to promote international scientific exchange, has been collaborating with academic organizations throughout the world. This has been achieved by sponsoring international academic congresses held here in Japan, as well as by sending Japanese delegates to similar international congresses held overseas.

The 23rd General Assembly of the International Union of Geodesy and Geophysics is jointly sponsored by the 16 Japanese geophysical societies and the Science Council of Japan. It is our special pleasure to hold the General Assembly of the International Union of Geodesy and Geophysics for the first time not only in Japan but also in Asia, with the attendance so many scientists from so many countries. It is my great pleasure to meet distinguished earth scientists from all over the world and to have an opportunity to attend their valuable lectures and presentations.

Many reports will be made during the course of this conference, covering diverse fields of study. It is expected that serious discussions will be held regarding the future directions of research projects, as well as the need to identify important themes of research and to promote joint international collaborative efforts in these areas. Of particular interest will be the discussions centered around the main theme of this Assembly “the State of the Planet: Frontiers and Challenges”

The City of Sapporo, where we are gathering now, is one of the political, economic, cultural as well as academic centers of Japan, despite its relatively short history in comparison to other large cities in the world. I trust you will all enjoy the modern ambience of this city of 1.8 million as well as the rich natural environment of the northern island of Hokkaido.

In closing, may I express my sincere wish that this 23rd General Assembly of the International Union of Geodesy and Geophysics will make important contributions in all your fields of research and that all the foreign guests and participants fully enjoy your stay in Japan. It is my sincere hope that you will establish closer ties with your colleagues during the Assembly and that the occasion will be a memorable one to each and all.

Thank you very much for your kind attention.

ADDRESS BY PROFESSOR MASARU KONO, PRESIDENT OF IUGG

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Your Majesties, distinguished guests, dear colleagues, ladies and gentlemen,

It is my pleasure to welcome you to the 23rd General Assembly of the International Union of Geodesy and Geophysics. This is the first ever Assembly held in an Asian country. This fact clearly indicates the increasing importance of the Asian countries and scientists from them in the international scientific scene in the disciplines of geodesy and geophysics.

The IUGG has a long history. It was founded in 1919, more than 80 years before. Since its formation, the IUGG provided the international forum for presenting and discussing the most recent discoveries in geophysics by setting up the General Assemblies and other meetings. Another important role of the IUGG is to coordinate international research activities. An example of the most prominent as well as successful coordination can be found in the International Geophysical Year, a project which was carried out in 1957. We are approaching the 50th anniversary of the IGY, and its celebration will be one of the highlights of the next Assembly in 2007.

As one of the long-standing organizations, the IUGG has also problems just because of its long history. Some of its modus operandi became too old-fashioned to meet the present situation. To overcome such shortcomings, the IUGG conducted a survey of its own problem by collecting opinions from the National Committees as well as its Associations. We then decided to enhance the good points of the IUGG and to modify some of its workings if they are thought inappropriate as seen from the today's standard.

There is no time to go into the details, but I will report some of the major points in which the IUGG is now trying to update itself. The first one is to enhance the communication between the Union and its components as well as the geophysics community at large. In the past few years, the web page was renovated and an electric journal was established by the effort of the secretariat. These increased and strengthened the ties between the Union and its component bodies, especially the National Committees.

Secondly, we tried to strengthen the ties with international organizations such as ICSU and UNESCO. There are a lot of important problems, such as global warming, mitigation of natural hazards, and water supply and use, which are within the science covered by the IUGG. These are also problems crucial for the future of the human being, and needs a lot of international coordination. It is very important that the science carried out by the IUGG should be disseminated in appropriate form, and the bodies such as ICSU and UNESCO are important as they are regarded highly in these matters in the international scene. In the last few years, the IUGG Bureau and Executive Committee paid special attention to keep good contact with them and to let them know what are our views in the important problems I mentioned earlier. As a result of these efforts, we feel that stronger connections are now developed between the IUGG and these organizations.

Thirdly and perhaps most important to the scientists gathering here, the IUGG is trying to make our Assembly more interdisciplinary and match for the needs of the scientific community. With the help and cooperation from all the Associations, we set up the Union Symposia under an overarching theme of the 'State of the Planet: Frontiers and Challenges'. I sincerely hope that this mode of Assembly organization is welcomed by most of the participating scientists. These changes are certainly on-going process, and the IUGG is prepared to continue these efforts in the future. We would therefore welcome suggestions to make the IUGG better from all of our colleagues.

Finally, I would like to mention about the tremendous effort put in organizing this Assembly. The Local Organizing Committee, lead by Professors Uyeda and Suyehiro, did a wonderful job of preparing everything perfectly and in time. The LOC also provided a big amount of fund to the IUGG, which was used to support the attendance of many scientists from developing countries to this Assembly. The Scientific Programme Committee with Professor Nishida as Chair is responsible in implementing the program of this Assembly. On behalf of the IUGG, I would like to express our appreciation to these and other people who helped in the organization.

Thank you very much.

ADDRESS BY DR. JO ANN JOSELYN, SECRETARY GENERAL OF IUGG

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Your Majesties, Honored Guests, Dear Colleagues, Ladies and Gentlemen,

It is my pleasure to fulfill my duty to report to the Assembly regarding certain aspects of the administration of the Union. However, because of the special nature of this Welcome Ceremony, most of that report will be presented at the Closing Ceremony on July 11.

At this time, it is sufficient to say that by means of meetings and correspondence during the past 4 years, the Bureau administered the Union affairs in accordance with our rules and the Council decisions made in Birmingham in 1999. A record of the business conducted at the 3 Bureau meetings in 2000, 2001, and 2002, and the Executive Committee meeting held here in Sapporo in 2001, are posted on the IUGG web page for your information and comment. This public record is a hallmark of the past 4 years, in which there has been an emphasis on openness and inclusiveness in IUGG administrative matters.

President Kono has reported on the major ongoing activity of the quadrennium - the work to survey our stakeholders and examine the goals and vision of the Union. Besides that, we worked hard to develop a useful web site, and initiated a monthly newsletter. We also allocated \$50,000 to support 22 meetings, workshops and schools in 17 different countries, \$121,905 to support interdisciplinary initiatives that particularly benefit developing countries, \$146,800 to support inter-Union activities such as the International Lithosphere Programme, and won a total of \$73,000 in competitive ICSU grants to promote Association research objectives.

We also preserved the records of the Union in the Niels Bohr Library of the Center for the History of Physics, where they are now accessible by historians and scholars.

As expected, the preparations for the 2003 General Assembly were a major activity that primarily rested in the hands of the Local Organizing Committee and the Scientific Programme Committee. The SPC, composed of the Secretaries-General of the Associations, was chaired by Prof. A. Nishida, who skillfully coordinated the construction of the most interdisciplinary scientific programme ever planned for a General Assembly. We are also grateful for the leadership of Dr. R.S.J Sparks, who conceived of and convened the State of the Planet: Frontiers and Challenges Union Symposia.

The excellent work of the Local Organizing Committee under the leadership of S. Uyeda and K. Suyehiro was critical to the success of the Assembly. This is the first time in its history that IUGG, one of the oldest of the Geophysical societies, has met in Asia. And we are in Sapporo because of the enthusiastic and persistent work of Prof. Kamide. Of particular importance, the Local Organizing Committee raised money needed to support scientists who could not otherwise afford to travel to Japan. They also arranged for the production of an IUGG educational video show, and, made this extraordinary Welcome Ceremony possible. We have benefited tremendously from their work as well as the generous sponsorship of the City of Sapporo and the Hokkaido government. We are truly grateful.

Finally, I wish to thank the IUGG Bureau, Association Officers, and the Inter-Associations Committees for their work of the past 4 years. In particular, the IUGG President, Dr. Masaru Kono, has served the Union tirelessly and effectively, and we owe him a heartfelt debt of gratitude.

And of course, thanks to you dear colleagues, who have worked well to advance and promote and teach earth science during the past 4 years.

ADDRESS BY HIS MAJESTY THE EMPEROR OF JAPAN

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

I am very pleased that the XXIII General Assembly of the International Union of Geodesy and Geophysics is being held here in Sapporo with so many participants from Japan and abroad. I would like to express my deep respect to those who made their utmost efforts to hold this major scientific conference, encompassing the whole range of earth sciences, from the sun to the earth's center.

Japan is an island country of rugged mountains, situated along plate boundaries, where volcanic activity and earthquakes occur frequently. The Japanese archipelago is also strung along the paths of many typhoons. Hence, nature in Japan is very harsh indeed. This is demonstrated by the fact that, until recent years, the annual death toll from natural calamities was never below 100, even in years without large-scale disasters. Due, however, to the tireless efforts made by all concerned for many years to improve flood control and forestry conservation, coupled with the development of advance-warning systems, death tolls resulting from typhoons and torrential rains have been in marked decline.

As for volcanic eruptions, after the eruption of the Unzen Fugendake in Nagasaki Prefecture, 1991, which took 43 lives by the pyroclastic flow, no loss of life was recorded during the eruptions of either the Usuzan of Hokkaido or Miyakejima Island in Tokyo Prefecture both in the year 2000. In both cases, decisions which led to evacuation were quite adequate, based on the outcome of the research efforts made by volcanologists. It is unfortunate that, because of the emission of toxic volcanic gases, the entire population of Miyakejima Island have not been able to return home to this day.

As to earthquakes, their forecasting is still difficult. In recent years, the "Southwest Hokkaido Offshore Earthquake" took place in 1993 near Okushiri Island in Hokkaido and more than 200 lives were lost in the earthquake and accompanying tsunami. Two years later, in 1995, the major Hanshin-Awaji earthquake occurred and more than 6,400 people perished.

Earthquakes have continued to plague the Japanese people from ancient times. The first record of earthquake disaster is found in the Nihon Shoki, Japan's historical chronicle completed in the year 720. It says that in the year 599 (the 7th year of Empress Suiko's reign) "An earthquake took place and all buildings were destroyed". Another major earthquake is recorded as having taken place about 90 years later. The record seems to indicate that this earthquake was one of the great earthquakes now called Nankaido Earthquakes.

Research on earthquakes in Japan started after our country ended the isolation that had lasted for more than 200 years and established formal diplomatic relations with Western countries. Japan invited scientists from those countries and began to learn science and technology from them. Among those invited were British scientists John Milne and James Alfred Ewing who founded the Seismological Society in 1880. This was the world's first academic society dealing with earthquakes, preceding those of other countries.

The International Union of Geodesy and Geophysics was established in 1919, and its first General Assembly took place in Rome in 1922. Ever since, in the field of earth sciences, international cooperation has been actively conducted, taking advantage of programs such as the International Polar Year, the International Geophysical Year and the International Antarctic Research Project. More recently, with the advent of new observation technologies, such as satellite observations and deep sea research, as well as super computers, international cooperative research has become more and more active.

Today, science and technology have made remarkable progress, but human activity based on them has begun to seriously affect the earth. This underscores the increasing importance of the role played by earth sciences for maintaining the earth's environment in good conditions and for securing the safety of human life.

In closing, I would like to express my hope that this General Assembly will be a fruitful one, bringing about further progress in cooperative research going beyond national boundaries, and contributing to the advancement of earth sciences.

Thank you.

**ADDRESS BY MS. YASUKO IKENOBO,
PARLIAMENTARY SECRETARY FOR EDUCATION, CULTURE, SPORTS,
SCIENCE AND TECHNOLOGY**

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Your Majesties the Emperor and Empress, Distinguished Guests, Ladies and Gentlemen:

On this occasion of the Welcome Ceremony of the 23rd General Assembly of the IUGG under the presence of their Majesties the Emperor and Empress, I would like to make a few words of congratulatory greeting, representing the Ministry of Education, Culture, Sports, Science and Technology.

Japan is one of the oldest members of the IUGG since its foundation in 1919. It is a delight of the Ministry to see the General Assembly of IUGG being held here in Sapporo in such a magnificent way for the first time in Asia. We wholeheartedly welcome the researchers and their families from all over the world and express our respects to all the people who contributed to realize this event.

The earth science is deeply concerned with the future of humankind because it deals with a wide variety of phenomena, such as earthquakes, volcanic eruptions, typhoon, global climate changes, and auroras. For the progress of the earth science, global scale international and interdisciplinary cooperation is indispensable. We believe that the IUGG is very important in this respect.

As is well known, we are facing many serious problems such as global warming, exhaustion of natural resources, and natural hazards like earthquakes, volcanic eruptions and typhoons. I believe that this General Assembly, having the attendance of the frontier research scientists of the world, is of a major significance in promoting the basic research on the problems we have.

The Ministry of Education, Culture, Sports, Science and Technology has been trying to assist the international development of earth science. We are now supporting, for instance, the IODP, the Integrated Ocean Drilling Project and other drilling projects on land and the Antarctic Ice, expecting to obtain valuable information on the mechanism of earthquakes and volcanic activity and the geologic past. The world's fastest computer, called, Earth Simulator, has been in operation from last year. It is expected that detailed simulation will be achieved in the fields such as meteorology, seismology and geomagnetism.

The earth's environment in the 21st Century is not ideally good. To leave the earth in better condition to future generations, the earth science with which you all are involved will make important contributions. I sincerely wish that this General Assembly will make a great success and the participants from overseas and their families will enjoy the nature and culture of Hokkaido. Thank you very much.

**MESSAGE FROM MR. JUNICHIRO KOIZUMI,
PRIME MINISTER OF JAPAN**

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 - JULY 11, 2003

Pleased to extend a hearty welcome to all participants from all over the world on this occasion of the Welcome Reception of the XXIII General Assembly of the International Union of Geodesy and Geophysics in Sapporo, in the presence of Their Majesties The Emperor and Empress, under the joint-sponsorship of the Science Council of Japan, The Geodetic Society of Japan, Seismological Society of Japan, Volcanological Society of Japan, Meteorological Society of Japan, Society of Geomagnetism and Earth, Planetary and Space Science, Japan Society of Hydrology and Water Resources, The Japanese Association of Hydrological Sciences, Japanese

Society of Snow and Ice, The Oceanographic Society of Japan, The Japanese Society for Planetary Sciences, The Japanese Society of Limnology, Japan Society of Civil Engineers, Japanese Association of Groundwater Hydrology, The Balneological Society of Japan, The Erosion-Control Engineering Society, Japan and The Geochemical Society of Japan.

I wish a great success of this international congress for advancement in the field of geodesy, geophysics and planetary sciences.

MINUTES OF THE COUNCIL MEETINGS
MINUTES OF THE FIRST IUGG COUNCIL MEETING
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Date: Tuesday July 1, 2003 (4pm – 7pm)

Place: Highness Hall A/B, Royton Hotel

Participants:

- National Delegates at Council:

<i>Argentina</i>	<i>Dr. Juan Vilas</i>
Australia	Dr. Charles Barton
Belgium	Prof. Andre L. Berger
Brazil	Prof. Denizar Blitzkow
<i>Bulgaria</i>	<i>Dr. Diana Jordanova</i>
Canada	Dr. Ronald E. Stewart
China	Prof. Chuazhen Zhu
Colombia	Eng. Laura Sanchez Rodriguez
Croatia	Prof. Dr. Mirko Orlic
Czech Republic	Dr. Vladimir Cermak
Denmark	Dr. Soren Gregersen
Egypt	Prof. Attia A. Ashour
Finland	Prof. Dr. Pentti Malkki
France	Dr. Michel Menvielle
Germany	Prof. Dr. Gerd Tetzlaff
Hungary	Prof. Dr. Jozsef Adam
Iceland	Mr. Pall Jonsson
India	Dr. Vijay P. Dimri
Indonesia	Mr. R.W. Matindas
Iran	Dr. M.R. Gheitanchi
Ireland	Dr. Peter Lynch
Israel	Prof. Zev Levin
Italy	Prof. Lucio Ubertini
Japan	Prof. Kojiro Irikura
Jordan	Eng. Saliem M. Khalifeh
Korea	Dr. Wooil W. Moon
New Zealand	Dr. David A. Rhoads
Norway	Dr. Bjorn Geirr Harsson
<i>Philippines</i>	<i>Dr. Bart C. Bautista</i>
Poland	Prof. Dr. Jan Krynski
Portugal	Prof. Dr. Luis A. Mendes-Victor
Romania	Dr. Constantin S. Sava
<i>Russia</i>	<i>Dr. Yuri S. Tyupkin</i>
Slovenia	Mrs. L. Globevnik
South Africa	Prof. Charles L. Merry
Sweden	Dr. Birna Olafsdottir
Switzerland	Prof. Dr. Huw C. Davies
Thailand	Major General T. Thambumroong
Turkey	Dr. Lt. Col. Eng Onur Lenk
United Kingdom	Prof. David N. Collins
United States	Prof. David N. Jackson
Vietnam	Prof. Dr. Thi Kim Thoa Nguyen

Italics for Countries with Observer Status only

- Members of the Bureau:

President	Prof. Masaru Kono
Vice President	Prof. Uri Shamir
Treasurer	Dr. Aksel Hansen
Secretary General	Dr. JoAnn Joselyn
Asst. Sec. Gen.	Mr. Ryan Aucone
Member	Dr. Tom Beer
Member	Dr. J.Y. Chen
Member	Dr. Harsh Gupta

- Members of the Finance Committee:

President	Dr. A. Fred Spilhaus
Secretary	Dr. Patrick Pinet
Member	Prof. Michael J. Hamlin
Member	Prof. Vinod K. Gaur
Member	Prof. Dr. Erwin Groten

- The Executive Committee and Secretaries-General of the Associations:

Past President	Prof. Peter Wylie
President IAG	Prof. Fernando Sanso
Secretary IAG	Prof. Christian Tscherning
President IAGA	Dr. David Kerridge
President IAHS	Dr. Kuniyoshi Takeuchi
Secretary IAHS	Dr. Pierre Hubert
President IAMAS	Prof. Dr. Huw Davies
Secretary IAMAS	Prof. Roland List
President IAPSO	Dr. Paola Rizzoli
Secretary IAPSO	Dr. Fred Camfield
President IASPEI	Prof. Brian Kennett
President IAVCEI	Prof. Steve Sparks
Secretary IAVCEI	Dr. Steve McNutt

- The following alternate Council Delegates attended the First Council Meeting:

Argentina	Dr. Elizabeth Rovere
France	Dr. Jean-Pierre Barriot
	Dr. Roland Schlich
India	Prof. Gurbax Lakhina
Jordan	Eng. Nedal Y. Al-Sagarat
Romania	Dr. Vladimir Ivanovici

- The President invited the following guests for the First Council Meeting:

ICSU Rep.	Dr. P. Tyson
American Rep.	Ms. E. Lawson
L.O.C.	Dr. K. Suyehiro
Nom. Committee	Dr. K. P. Schwarz
Aust. Presentation	Mr. L. Patroni
Aust. Presentation	Mr. R. Cas
Ital. Presentation	Dr. S. Grimaldi

1. Greetings: Presentation of the Credentials
Salutations: Présentation des lettres d'accréditation

The Meeting was called to order at 4 PM in the Highness AB room by President Kono.

41 national delegates were present at the opening, 37 eligible to vote. The total number of member countries eligible to vote is 50 (64 minus 8 in Observer Status, minus 6 in Associate Status). The quorum (=17) is reached. Other national delegates arrive in the course of the meeting amounting to 42 with 38 eligible to vote.

2. Approval of the Agenda
Approbation de l'ordre du jour

President Kono asked if the agenda could be approved. Prof. Malkki (Finland) asked if there

could be time allotted to discuss a programme initiative that builds on the heritage of the International Geophysical Year that will be celebrating its 50th year in 2007-2008. Prof. Kono explained that there were several such initiatives and that the IUGG has set up a special committee to coordinate and promote these programmes. Rather than ask the Council to consider these programmes individually, he requested that the Committee be allowed to do its work and present a summary report. This was accepted, and the Agenda was adopted.

3. Approval of the minutes of the Council Meeting in Birmingham (1999)
Approbation du procès-verbal de la réunion du Conseil à Birmingham (1999)

The minutes of the 1999 Council Meetings were printed and distributed to the participants of the 1999 General Assembly in the Comptes Rendus of the 22nd General Assembly, recently posted on the IUGG web page. Because there was concern that many of the Council members present here were not in Birmingham or were not delegates to the 1999 Council, those minutes were copied for everyone. President Kono asked if the Minutes could be approved, and there was no dissent.

4. Brief Reports of the Officers
Brefs rapports des responsables

- **President Masaru Kono**
- **Vice-president Uri Shamir**
- **Secretary General Jo Ann Joselyn**
- **Treasurer Aksel Hansen**

President – Masaru Kono

The report of the President is included in the Council Agenda book, and the Council Members were referred to those pages. However, President Kono made special mention of the work of the Bureau to consider IUGG Structure, Goals and Objectives, and *modus operandi* using a questionnaire prepared for both the IUGG Adhering Bodies and the Associations. An example of the questions asked was the issue of attendance at assemblies in relation to the length of the General Assemblies. A full report of this activity will be made to the Council under Agenda Item 13. He also noted the appointment and work of the Statutes and By-laws committee and the IGY+50 committee. President Kono wished for better communication between IUGG and the Member Adhering Bodies and wider consideration of today's scientific issues through inter-Association activities and increased cooperation with other scientific bodies.

Vice President – Uri Shamir

The report of the Vice President is included in the Council Agenda book, and the Council Members were referred to those pages. In particular, Vice President Shamir has supported a Working Group of young scientists tasked to organize a Union Symposium: Geosciences: The Future, to be given on the last day of the Assembly, and Council Members were urged to attend. They have produced a significant document available on the IUGG web page, and are preparing an executive summary. Prof. Shamir believes that these young people will be excellent candidates for future leadership positions within IUGG and the Associations. Prof. Berger (Belgium) asked about the significance of the term 'geosciences' as opposed to 'geophysics,' and also about the future of the working group. Dr. Shamir replied that geosciences was

terminology currently being promoted by UNESCO as a term more inclusive of societal issues, and that he hoped that the Working Group could continue as a resource for new thoughts on IUGG issues while continuing to provide an opportunity for leadership development.

Prof. Shamir also reported his work with the IUGG Structure, Goals, and Objectives Committee, the IUGG Statutes and By-laws Committee, as well as his work on an ICSU (International Council for Science) Assessment panel on the Environment and its Relation to Sustainable Development.

Secretary General – JoAnn Joselyn

The report of the Secretary General is included in the Council Agenda book, and the Council Members were referred to those pages that summarize the actions of the Bureau and Executive Committee during the past 4 years. Dr. Joselyn noted that summaries of the minutes of the meetings of the Bureau and Executive Committee are posted on the IUGG web page. Particular highlights include the appointment of Dr. Tom Beer to fill the vacancy on the Bureau left by the resignation of Dr. Vere Shannon, improved communications with IUGG constituents by a variety of means, archival of the records of the Union in the Niels Bohr Library of the Center for the History of Physics, the establishment of the inter-Associations Commission on Geophysical Risk and Sustainability and other inter-Association bodies, the decision to cease charging for the IUGG Yearbook (now available on the IUGG web page), and the awarding of grants to support meetings and inter-Association initiatives that benefit developing countries.

The membership of the Union is now 63 Adhering Bodies (two more to be considered later in the meeting), which is 12 less than at the close of the 22nd General Assembly (Birmingham) in 1999. Dr. Joselyn noted that the loss would have been greater if not for the provision of the category of Associate Member, which she believes has been a positive step toward preserving and increasing membership.

A short report was made on attendance at the General Assembly. The registration on Monday 30 June was 915, including 82 that registered on site. The LOC is hoping that registration could ultimately reach 5000 persons. The amount of money raised for travel assistance from all sources (50 M yen from the LOC, \$70,000 from the IUGG budget, and additional funds provided by the Associations) exceeds \$630,000. 782 individuals were awarded grants. There are 182 Symposia convened at this General Assembly, including 12 Union Symposia and 59 inter-Associations Symposia.

The actions of the Bureau and Executive Committee during the past term were offered to the Council for their approval. Dr. Kono asked for this approval, especially including the appointment of Dr. Beer to the Bureau, and there was no dissent.

Prof. Jackson (USA) commented that the actions of the Secretariat to increase the visibility of IUGG and access to its officers has been very much appreciated.

Treasurer – Aksel Hansen

The report of the Treasurer is included in the Council Agenda book, and the Council Members were referred to those pages. An additional page was distributed that included data from 2003 not available in the original report. Dr. Hansen reported that IUGG has no debt and income has exceeded expenditures for several years owing to special circumstances, such as an unexpected surplus from the Birmingham General Assembly. However,

income from Member dues is decreasing owing to the steady loss of members and 2 decreases in Category, and we have to consider our financial future with concern.

Dr. Kono asked the Council for questions or comments, there were none regarding this report. Dr. Kono asked the Council for approval and it was approved.

5. Report of the Nominations Committee Rapport du comité des candidatures

Dr. K-P Schwarz, Chair of the Nominations Committee, noted that the first version of the Committee's report is in the Council Agenda Book. The final version was sent to the Council Delegates two months before the Council Meeting and an additional copy was distributed at this meeting. As provided by the By-Laws, two additional nominations were added to the first version, and therefore appear on the final list. However, in the last few days a letter was received from Dr. Nikolaev, a candidate for Bureau member, asking that his name be removed from the ballot. Dr. Schwarz then introduced the nominees on the ballot and asked them to stand and be recognized if they were present. Candidates present were U. Shamir and R. Peltier for President; P. Rizzoli and T. Beer for Vice President; A. Hansen for Treasurer; D. Jackson, M. Hamlin, P. Pinet, B. Kennett, V.K. Gaur, and J. Vilas for Finance Committee; and H.K. Gupta and C. Sava for Bureau Member.

6. Matters of Membership Affaires d'adhésion

President Kono asked that the Delegates from Vietnam (Dr. Nguyen Kim Thoa) and Japan (Dr. K. Irikura) serve as tellers to count the ballots. The Secretary-General introduced the ballot books. The sequence of ballots labelled from 1 to 10 were prepared to finalize previous ballots taken by correspondence. Delegates were asked to vote for, or against each issue, or else to abstain. Two membership applications had been received by the Secretariat since the Council Agenda books were printed. These were an application from Albania to be readmitted as a member in Category A (assigned to Ballot # 11), and an application from the Republic of Mauritius to be admitted as a new member in Category A (assigned to auxiliary ballot # 50). Ballots for new members require a 2/3rds majority for passage (26), but all other ballots require only a simple majority (16). The voting proceeded, but owing to time constraints, the ballots were not counted until the meeting recessed so that the tellers could participate in the business being conducted. The results of the ballots (not including one blank and one spoiled ballot) follow:

- » Admission: Colombia as a Member in Category 1
Yes 36; No 0; Abstain 2
- » Reduction: Category of Indonesia from 3 to 1
Yes 34; No 1; Abstain 3
- » Admission: Armenia as an Associate Member
Yes 36; No 0; Abstain 2
- » Re-admission: Peru as an Associate Member
Yes 37; No 0; Abstain 1
- » Transfer: Morocco to Associate Member
Yes 36; No 0; Abstain 1
- » Transfer of Nigeria to Associate Member
Yes 36; No 0; Abstain 2
- » Transfer: Serbia and Montenegro to Associate Member
Yes 36; No 0; Abstain 2
- » Reduction: Category of France from 8 to 7
Yes 25; No 10; Abstain 3

- » Transfer: Pakistan to Associate Member
Yes 34; No 2; Abstain 2
- » Admission: Bosnia and Hercegovina as an Associate member
Yes 37; No 0; Abstain 1
- » Admission: Albania as an Associate member
Yes 35; No 0; Abstain 3
- » Admission: Mauritius as an Associate members
Yes 34; No 0; Abstain 4

7. Proposed Changes of Statutes and By-Laws Propositions de changements des statuts et du règlement intérieur (U. Shamir)

Dr. U. Shamir explained that the Statutes and Bylaws committee was established by the President with the responsibility to receive proposals, review them, and organize them in a manner that would be helpful to the Council delegates. In addition to the Chair (U. Shamir), other committee members were E.R. Engdahl, R. Schlich, V. Shannon, and P. Wyllie. He noted the report in the Council Agenda Book, and that there was repetition of pages of the proposals. He instructed the delegates to discard the repeated pages and suggested that the proposal from the US be discussed first, followed by the comments on interpretations (attachment 3 of the report). The Danish proposal would then be taken up.

Proposal by the US National Committee Proposition du Comité national des Etats-Unis d'Amérique

The objective of this proposal is to open up the Council meetings to attendance by others than Council delegates and IUGG officers. Discussion included specific terms used in the proposal (viz., auditors, meaning listeners) and the implications of admitting Associate Adhering Bodies. If Associate Members can attend and speak at Council meetings, the incentive to pay dues is greatly reduced. On this particular point, a vote by show of hands was taken. There were 14 votes in favor of permitting Associate Members to speak in Council Meetings, and 18 opposed to allowing them to speak. Other discussion centered on whether any attendees should be allowed to speak. There was also discussion on the legislative procedure to be followed to address the concerns raised by Council delegates. Dr. Shamir suggested, and it was accepted by the US delegate (David Jackson), that the original proposal be modified by a committee of Council members (delegates and IUGG officers) and brought back for Council consideration at the Second Council session on Friday 4 July.

Proposals from the Statutes and By-Laws Committee Propositions du Comité des statuts et du règlement Intérieur

Dr. U. Shamir explained the background for Attachment 3 as given in the Council Agenda Book. The first issue regards how to determine the number of years a country in Observer status resulting from non-payment of dues, and the year in which scientists from this country cannot be elected to hold office (see also next paragraph). A chart in Attachment 3 clarifies how the determination should be made.

The second issue is that interpretation be applied to By-Law 10(c) so that "not eligible to hold elected positions" is interpreted as "not eligible to be elected." In this way, it is not necessary to scrutinize the officers of the Bureau,

Finance Committee, and each Association every year to determine whether any officer elected at the last General Assembly is still eligible to serve.

A vote by show of hands was made to accept these two clarifications which will be introduced into statute 14(b) and Bylaw 10(c). All were in favour (none oppose, none abstain).

Proposal from the Danish National Committee Proposition du Comité national du Danemark

Dr. Shamir explained that the Finance Committee (FC) and the IUGG Executive Committee (EC) are two parallel bodies elected by the Council. The Danish proposal is lengthy because so many sections of the Statutes and Bylaws are involved. However, in essence the proposal contains a principle concentrated in Statute 11 and then details. The proposed principle is that instead of existing for the entire term between General Assemblies, the Finance Committee stands only during the General Assembly and then ceases to exist in the interim. The remainder of the proposal is implementation. The Council was asked to consider first the principle before considering the details.

Dr. Soeren Gregersen, the Council Delegate from Denmark, was invited to present the original proposal. He pointed out that while the present system is working, there is awkward overlap between the tasks of the Executive and the Finance Committee. Presently, there are 3 areas of responsibility of the FC:

1. monitoring and overseeing the economy, which is done in any case by the Treasurer and the Bureau as part of their ongoing responsibilities;
2. preparing of the budget, which the Treasurer is able to do in consultation with the EC;
3. auditing of the accounts to see that the economy is spent in accordance with Council decisions and in agreement with traditions. It is agreed that this must be done, but need not be done by an overlapping body.

The proposal seeks to eliminate overlapping functions by retaining the FC to do the third task. Dr. Gregersen asked that the Council accept this principle.

Dr. Schlich (France) asked that if the present situation works, why should we change? Dr. Gregersen's reply is that the Council is not getting value for their money. Dr. Malkki (Finland) asked if this proposed task can at all be done during the General Assembly? A Finance Committee that operates only within 10 days may not be effective. Dr. Spilhaus, Chair of the FC, replied that he does not think the auditing function would work as well without a continuing FC in place. Dr. Hamlin, a member of the present FC, agreed but thought that the current situation could be streamlined.

Dr. Ashour (Egypt), a former member and Chair of the Finance Committee, cannot remember any divisions between the FC and the EC but did recall an instance regarding the Birmingham General Assembly where the FC insisted that an issue be brought to the Council and thereby saved the Union a lot of money.

Dr. Barton (Australia) asked what were the costs for the Finance Committee for the past term? Dr. Spilhaus, Chair of the FC, replied that the FC did meet twice this past term, sent two persons to the 2002 Bureau meeting (although only one person required travel support) and had one conference telephone call. But the basic costs are those of one meeting for five persons (transportation and living expenses) plus travel support to attend the General

Assembly. Dr. Barton then asked if it is necessary to have 5 members. Dr. Spilhaus replied that the advantage of five people was that differing opinions offer better perspectives.

After the discussion in which the sentiments of the Council were expressed, Dr. Shamir suggested that a modified proposal in consultation with the Danish delegate and other Council delegates and the present Finance Committee, could be prepared and presented to Council at the Second meeting on Friday. The essential points of the modified proposal, worked out in consultation with the FC, were distributed to the delegates as a one-page draft document with the following 5 points.

1. The Finance Committee shall have 5 members, elected by the Council at its meeting during the General Assembly, for a period of four years. Three members would be elected from among the members of the Council and two would be elected from the members of the previous FC.
2. The Treasurer shall prepare the budget, in consultation with the EC and FC, and present it to the Council. The FC shall oversee the execution of the budget.
3. The FC shall provide advice to the Treasurer and the EC as required.
4. The Chair of the FC shall normally be invited to meetings of the Bureau/EC when financial matters are on the agenda.

Dr. Jackson (USA) asked when the proposal, if accepted would become active? All changes to the Statutes and Bylaws become effective at the end of the General Assembly. Implementation must then be considered.

Dr. Gregerson indicated that he preferred the Danish proposal and asked for its approval. Dr. Shamir proposed a vote on accepting or rejecting the modified proposal. That is, a yes vote would indicate that the proposed principle outlined above was preferred to the original Danish proposal. Ballot # 49 was used to register the vote. The result was 32 yes, 3 no, and 2 abstentions. Dr. Gregersen accepted the wishes of the council to modify the proposal and agreed to serve on the drafting committee. Dr. Shamir agreed to facilitate the committee, and President Kono asked Dr. Barton (Australia) and Dr. Davies (Switzerland) to serve in addition to representation from the Finance Committee. Others were welcomed to participate by contacting Dr. Shamir.

8. Presentation of the Proposals for the XXIV General Assembly in 2007

Présentation des propositions pour la XXIV Assemblée Générale en 2007

Presentations were made by Dr. Ubertaini and representatives of CNRS and the University of Perugia, Perugia, Italy, and Dr. Cas and other representatives on behalf of Australian Academy of Sciences, Melbourne, Australia. Both bidders have booths in the exhibit hall and the delegates were all invited to stop by for additional information.

The First Session then closed at 7:35 pm.

Delegates were invited to a reception sponsored by the Australian delegation immediately after the close of the Session.

MINUTES OF THE COUNCIL MEETINGS
MINUTES OF THE SECOND IUGG COUNCIL MEETING
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Date: Friday July 4, 2003 (130-5pm)

Place: Highness Hall C, Royton Hotel

Participants:

- National Delegates at Council

<i>Argentina</i>	<i>Dr. Juan Vilas</i>
Australia	Dr. Charles Barton
Austria	Dr. Michael Kuhn
Belgium	Prof. Andre L. Berger
Brazil	Dr. Luiz Palo Souto Fortes
Canada	Dr. Ronald E. Stewart
Chile	Dr. Pablo Gran
China	Prof. Chuazhen Zhu
Colombia	Eng. Laura Sanchez Rodriguez
Croatia	Prof. Dr. Mirko Orlic
Czech Republic	Dr. Petr Holota
Denmark	Dr. Soren Gregersen
Egypt	Prof. Attia A. Ashour
Finland	Prof. Dr. Pentti Malkki
France	Dr. Roland Schlich
Germany	Prof. Dr. Gerd Tetzlaff
Hungary	Prof. Dr. Jozsef Adam
Iceland	Mr. Pall Jonsson
India	Dr. Vijay P. Dimri
Indonesia	Mr. R.W. Matindas
Iran	Dr. M.R. Gheitanchi
Ireland	Dr. Peter Lynch
Israel	Prof. Zev Levin
Italy	Prof. Lucio Ubertini
Japan	Prof. Shuzo Takemoto
Korea	Dr. Wooil W. Moon
Mexico	Prof. Jaime Urrutia-Fucugauchi
New Zealand	Dr. David A. Rhoads
Norway	Dr. Bjorn Geirr Harsson
Poland	Prof. Dr. Jan Krynski
Portugal	Prof. Dr. Luis A. Mendes-Victor
Romania	Dr. Constantin S. Sava
<i>Russia</i>	<i>Dr. Yuri S. Tyupkin</i>
Slovenia	Mrs. L. Globevnik
South Africa	Prof. Charles L. Merry
Spain	Dr. Lluís Pujades Beneit
Sweden	Dr. Birna Olafsdottir
Switzerland	Prof. Dr. Huw C. Davies
Thailand	Major General T. Thambumroong
Turkey	Dr. Lt. Col. Eng Onur Lenk
United Kingdom	Prof. David N. Collins
United States	Prof. David N. Jackson

Italics for Countries with Observer Status only

- Members of the Bureau

President	Prof. Masaru Kono
Vice President	Prof. Uri Shamir
Treasurer	Dr. Aksel Hansen
Secretary General	Dr. JoAnn Joselyn
Asst. Sec. Gen.	Mr. Ryan Aucone
Member	Dr. Tom Beer
Member	Dr. J.Y. Chen
Member	Dr. Harsh Gupta

- Members of the Finance Committee

President	Dr. A. Fred Spilhaus
Secretary	Dr. Patrick Pinet
Member	Prof. Michael J. Hamlin
Member	Prof. Vinod K. Gaur
Member	Prof. Dr. Erwin Groten

- The Executive Committee and Secretaries-General of the Associations:

Past President	Prof. Peter Wyllie
President IAG	Prof. Fernando Sanso
Secretary IAG	Prof. Christian Tscherning
President IAGA	Dr. David Kerridge
President IAHS	Dr. Kuniyoshi Takeuchi
President IAMAS	Prof. Dr. Huw Davies
Secretary IAMAS	Prof. Roland List
President IAPSO	Dr. Paola Rizzoli
Secretary IAPSO	Dr. Fred Camfield
President IASPEI	Prof. Brian Kennett
President IAVCEI	Prof. Steve Sparks

- The following alternate Council Delegates attended the First Council Meeting:

France	Dr. Michel Menvielle
	Dr. Jean-Pierre Barriot
India	Prof. Gurbax Lakhina

- The President invited the following guests for the Second Council Meeting:

ICSU Rep.	Dr. P. Tyson
American Rep.	Ms. E. Lawson
L.O.C.	Dr. K. Suyehiro

**1. Greetings, Presentation of the Credentials:
Salutations: Présentation des lettres d'accréditation**

The Meeting was called to order at 4 PM in the Highness AB room by President Kono.

41 national delegates were present at the opening, 39 eligible to vote. The total number of member countries eligible to vote is 50 (64 minus 8 in Observer Status, minus 6 in Associate Status). The quorum (=17) is reached. Other national delegates arrive in the course of the meeting amounting to 42 with 40 eligible to vote.

President Kono asked the Secretary General to announce the results of the voting on Membership issues. She reported that all votes were favorable. Dr. Malkki (Finland) asked to hear the numbers, which were then read. (The results are listed in the minutes of the first Council meeting). Dr. Kono also announced that the discussion on Agenda Item 7: Statutes and By-Laws, deferred from the First Council meeting, would resume following Agenda item 12 and that if necessary, Agenda Item 13: IUGG Goals and Vision, would be taken up at the third Council meeting in order to close today's meeting according to the schedule. Delegates were reminded that a reception sponsored by the Italian delegation would take place following the close of the Council meeting.

9. Reports by Association Presidents: Rapports des présidents des associations

During the past two years, President Kono visited all of the Association assemblies and was quite impressed with the wide range and importance of their activities. He apologized for the limited amount of time (approximately 3 minutes) each Association president was given to talk, and pointed out that summary reports for each Association are included in the Council Agenda Book. He noted the change in room arrangement so that the Association officers are seated near each other to better encourage the Associations to speak with a single voice.

The International Association of Geodesy (IAG)

Dr. Fernando Sanso, IAG President, noted that summarizing the past 4 years of activity in IAG in 3 minutes was extremely difficult. He decided to highlight two facts that have had a major influence in changing the direction of the traditional scopes of the Association. The first fact is the wide spread and qualitative improvements of the GPS technique, now used in almost all geodetic and geophysical enterprises. Second, there has been an impressive increase in knowledge of the gravity field of the Earth on a global scale based on the space missions directed to this aim (e.g., CHAMP, GRACE, and soon – GOCE). But besides those facts, IAG itself has undergone revolutionary changes in the past 4 years beginning with a complete rewrite of the Statutes and By-laws. Three main principles were used to reset IAG structure.

- 1) IAG was made to be more flexible and viable by eliminating one bureaucratic layer and simplifying the rules. The resulting structure is now based on 4 Commissions: 1) for the Reference Frames; 2) for the Gravity field; 3) for Earth Rotation and Geodynamics; 4) for Positioning and Applications.
- 2) The role of IAG services has been greatly enhanced and they now have representation on the IAG Executive Committee at the same level as the Commissions. These services are related to GPS positioning (IGS); Earth rotation (IERS), Gravity Field (IGFS – a new federation of all existing gravity field services), and the many services devoted to specific special techniques, such as laser imaging. In addition we share services with other bodies such as the Permanent Service for Mean Sea Level and Bureau International des Poids et Mesures. (BIPM) – Time Section.
- 3) A new Communications and Outreach Branch was created to help promote IAG Science and Products to the public.

Finally, also based on the great importance we are giving to the services and other actions to make IAG work visible and appropriately used by the other geosciences, we have initiated an IAG project IGGOS (Integrated Geodetic Global Observing System) that we think will help us in strengthening the scientific relationships with our sister Associations and better serve the general purposes of IUGG.

No questions or comments were asked from the Council.

Changes in IAG Statutes and By-Laws

The revised IAG Statutes and By-laws were included in the Council Agenda Book. Dr. Sanso noted that they have received extensive internal discussion including review by the IUGG Secretary General. The President proposed a vote for approval by show of hands. Those for – 36; those opposed – 0; those abstaining – 1. The revised IAG Statutes and By-laws were thus approved.

International Association of Geomagnetism and Aeronomy (IAGA)

Dr. David Kerridge, IAGA President, noted that IAGA seeks to encourage inclusiveness in the scientific community, making excellent science accessible to scientists worldwide. This has been best achieved during the past four years first through a well organized and successful joint Scientific Assembly with IASPEI in Hanoi in 2001, and then through the symposia planned and held at this General Assembly. Funding to support young scientists and scientists from developing countries was greater for the Hanoi Assembly than at any previous Assembly, but has been surpassed for the Sapporo Assembly. Smaller scale meetings and workshops are also important and IAGA has approved sponsorship for 25 meetings and workshops over the 1999-2003 term. IAGA also published a new flyer setting out the purpose and activities of the Association, and the IAGA web site has been improved and re-launched.

IAGA is well known because of its widely used practical products such as the International Geomagnetic Reference Field and the IAGA-sanctioned magnetic activity indices issued by the International Service for Geomagnetic Indices. A major factor influencing IAGA science has been and continues to be the wealth of spacecraft data feeding research and leading to new discoveries. Examples include the 3-D heliosphere data from Ulysses over a full solar cycle, multi-point observations of the magnetosphere using the four Cluster spacecraft, and the prospect of achieving the goal of having uninterrupted measurements from magnetic survey satellites for a decade. Advances have been made in theoretical aspects of possible mechanisms linking solar variability and climate change, and in understanding the effects on the atmosphere of greenhouse gases of anthropogenic origin. In the area of geohazards, the science underpinning understanding of solar-terrestrial interactions helps to determine how “space weather” conditions affect the risk to human activities in space, and to space- and ground-based technological systems. IAGA supports the recently-formed Inter-Association Working Group on Electric and Magnetic Studies of Earthquakes and Volcanoes (EMSEV) that is charged with establishing firm scientific understanding of the generation mechanisms of signals which may ultimately help to mitigate the effects of natural disasters. IAGA science has also benefited from successful ICSU grants to support the modernisation of magnetic observatories around the world through INTERMAGNET, and for a project to rescue and preserve, in digital form, old analogue magnetograms from worldwide observatories.

Looking forward over the next few years, IAGA will play an active role in marking the 50th anniversary of the International Geophysical Year (IGY) and has suggested the concept of an Electronic Geophysical Year (eGY) as a possible component of the IGY+50 celebrations. The eGY will demonstrate that distributed computing resources efficiently linking multiple remote sources of data and modelling codes could assist the participation of scientists in developing countries in research by reducing the need for major local capital investment. The next IAGA Scientific Assembly will be together with the IAMAS International Commission on the Middle Atmosphere in Toulouse, France in 2005. The current rapid pace of development in IAGA science guarantees a fascinating scientific programme.

No questions were asked from the Council.

International Association of Hydrological Sciences**(IAHS)**

Dr. Kuniyoshi Takeuchi, IAHS President, noted that the 21st century is a Water Century because of the many serious threats to water supplies and quality. Governments and international agencies (for example, at the recent World Water Forum in Kyoto) have noted the issues and are working towards managing and sustaining fresh water supplies. IAHS is taking responsibility to provide the scientific evidence needed to support these programmes. Specifically, two years ago they initiated a Working Group on the Prediction of Ungauged Basins (PUB) to promote the development of science and technology to provide hydrological data where ground-based observations are needed but missing. PUB connects existing programmes inside and outside IAHS and provides a forum, network, and the framework for integration. IAHS is a scientific association proactively dealing with the societal needs.

A question was asked regarding the implications of the dissolution of the ICSU Scientific Committee on Water Quality (SCOWAR). Dr. Kono answered the question because this matter was decided at the September 2002 ICSU General Assembly, which he attended. He said that IUGG had not been consulted in the matter but that the ICSU Executive Committee took the action and the matter was closed. However, he was confident that ICSU understands that water issues are critical and they are considering the best way to contribute this international need.

No further questions were asked at this time.

International Association of Meteorology and Atmospheric Sciences (IAMAS)

Dr. Huw Davies, President, noted that in recent years there have been enormous advances in Meteorology and the Atmospheric Sciences. These advances have been spurred on by the recognition that many of the major scientific challenges and societal concerns confronting humankind are related to the composition and state of the atmosphere. In turn these advances, challenges and concerns are reflected in the nature, scale and scope of IAMAS's activities during the period 2001-2003.

The overall nature of IAMAS's activities is influenced by its role as one of the constituent Associations of the International Union of Geodesy and Geophysics (IUGG) and by the establishment of several IAMAS-related programmes by the International Council for Science (ICS) - the parent organization of the IUGG. Thus IAMAS operates within the IUGG and concurrently recognises that its natural constituents - meteorologists and atmospheric scientists - are also strongly linked to, for example, the CLIVAR, SPARC and GEWEX sub-programmes of the World Climate Research Programme (WCRP) and the Inter-governmental Panel on Climate Change (IPCC). Likewise the overall changes in the scale and scope of IAMAS activities is a response to the new vistas of its constituents in relation to the societal and economic significance of air quality, weather forecasts, and climate change projections. From the standpoint of basic science the scale and scope has been broadened by the rapid advances in our observational capabilities, enhanced by the availability of powerful high-speed computers, and inspired by new theoretical perspectives and challenges.

These aspects were exemplified by the IAMAS Assembly held in Innsbruck, Austria between the 10-18 July, 2001. For example the themes of the President's Lectures ranged from "Anthropogenic Climate Change: the IPCC's 2001 Assessment" (given by Sir John Houghton, co-chair of Working Group I of the IPCC), "A Vision of

Global Weather Services in 2025" - An Update (by Rick Anthes, President of UCAR), Atmosphere-Ocean Biogeochemical Coupling (by Robert A. Duce, immediate Past President of IAMAS), and "Numerical Weather Prediction at the Meso-gamma Scale: Soon a Reality" (by Phillipe Bougeault of Meteo France & Head of Research Designate of ECMWF).

Again the series of innovative Lunchtime Lectures that provided young scientists with an opportunity to address the Assembly in plenary sessions featured contributions on the dynamics of orographic flow (by S. Mobbs), the socio-economic aspects of global warming (by R.A. Pielke Jnr.) and atmospheric flow predictability (by M. Ehrendorfer). In addition the Assembly Programme included an overview of the IPCC Third Assessment Report, and a palette of 33 symposia organized by the Commissions. The latter encompassed consideration of processes and phenomena spanning the aerosol space-scale and lightning time-scale to global-scale climate and paleoclimatological-time scales.

The Assembly was a notable success in terms of the breadth, depth and number of the scientific contributions, and in terms of the scale of financial support made available for young participants. The convivial setting of the Conference Centre (- that had just been awarded the coveted title of World's Best Conference Centre for 2000) was conducive to fostering informal scientific contacts and added significantly to the sense of occasion. The overall success was attributable in no small part to the tremendous effort and careful planning of our Innsbruck hosts - Prof. Michael Kuhn and his team. Also central to the success was the diligence of the Commission Officers and Symposia Convenors that ensured the timeliness of the Assembly's themes and the scientific quality of the individual contributions. Organizational oversight for the entire proceedings was in the competent and capable hands of Prof. Roland List (IAMAS Secretary General), and his Herculean efforts deserve special mention and acknowledgement.

During the Assembly both the IAMAS Bureau and the IAMAS Executive met twice. First significant steps were laid for the scientific component of IAMAS's contribution to the IUGG General Assembly in Sapporo, Japan in 2003, and after formal consideration of the invitation extended by China it was agreed that preparations commence for holding the IAMAS Assembly in Beijing in 2005.

IAMAS links with other international Committees and Commissions continue to be strong. The immediate past President of IAMAS (Prof. R.A. Duce) in recent years served as Chairman of the Executive Committee of SCOR. This linkage of the atmospheric and ocean sciences illustrates neatly the inter-disciplinarity that is one feature of today's research agenda and of IAMAS activities. Indeed Prof. Duce was also instrumental in setting-up the new international research programme on Surface Ocean-Lower Atmosphere Study (SOLAS). One current IAMAS Vice-President (Prof. R. Vincent) plays a lead role in the middle atmosphere STEP programme, and another current IAMAS Vice-President (Dr. R. Carbonne) chairs the influential WMO initiative entitled the World Weather Research Programme (WWRP). Again the IAMAS Secretary-General (Prof. Roland List) continues in his liaison role with the WMO and the WCRP. These contacts are central to the IAMAS mission.

A major effort after the Innsbruck Assembly has been devoted to preparing for the IUGG General Assembly to be held in Sapporo, Japan in summer 2003. The Assembly's overall theme will be "State of Planet Earth" entailing a series of Flagship Union Symposia with

complementary contributions from the Union Lectures. Prof. T. Matsuno, a former member of the IAMAS Executive, will deliver one of these prestigious Lectures, and IAMAS will also play a role in two of the Flagship Symposia. In addition to participation in inter-Association and IAMAS symposia and workshops, IAMAS will also pioneer a series of plenary lunchtime lectures and contribute to presentations to the general public. The Secretary-General has invested a major effort to the organization of these varied activities.

At the Commission level it is hoped that the revision of the IAMAS Statutes that accomplished during the IUGG Birmingham Assembly in 1999 will be mirrored by an overhaul of the Statutes of the Commissions in Sapporo.

The newly-revised IAMAS Statutes state that it is tasked to:- promote the study of the science of the atmosphere; initiate, facilitate, and coordinate international cooperation; stimulate discussion, presentation and publication of scientific results; and promote education and public awareness. These are far-reaching goals that merit the effort of the community, and our plenary meetings in Sapporo will provide an opportunity to fashion our activities to match these objectives. The need for a global, independent and non-governmental voice that encompasses the entire spectrum of activities in Meteorology and the Atmospheric Sciences is strong, and in this context IAMAS can play a unique role.

No further questions or comments were raised.

International Association of the Physical Sciences of the Oceans (IAPSO)

Dr. Paola Rizzoli, IAPSO President, reported that IAPSO has been very active since the 1999 General Assembly in Birmingham. Particularly good news was that IAPSO was able to raise money especially from the US National Science Foundation to assist young scientists to come both to the Assembly in 2001, Mar del Plata, and to Japan. 25 young scientists were supported in Sapporo. More than 400 scientists attended the IAPSO symposia in Sapporo. The second IAPSO Prince Albert I Medal was presented to Prof. Klaus Wyrtki and Prof. Walter Munk, the recipient of the 1st Medal. delivered the first Albert I Memorial Lecture. The most important event is the restructuring of the Association which started in 2001 with the establishment in Mar del Plata of a IAPSO Strategic Planning Task Group chaired by Vere Shannon and Paola Rizzoli. The group had a Think Tank meeting in Cape Town, South Africa, in October 2002 and the report "International Physical Sciences of the Oceans in the 21st Century: Science and Enabling Strategies" is almost completed. The Report will need vote and approval from the IAPSO national correspondents as a change in the by-laws is envisioned. A new Action Team was established in Sapporo, chaired by Paola Rizzoli, to prepare an implementation plan with the priority actions defined. Actions were already taken to increase IAPSO visibility. IAPSO will co-sponsor the AGU meeting in the US in January 2003 and the COSPAR meeting in Paris in 2004. A IAPSO Membership Form was distributed at the IAPSO symposia and a number of 300 members registered. The IAPSO Past President, Paola Rizzoli, will start a monthly electronic newsletter in September 2003 using this list as the basis for distribution. The IAPSO/SCOR WG 121 on Ocean Mixing had a successful meeting during the Assembly in Sapporo and will have a workshop at the University of Victoria, B.C., Canada, in 2004. A further IAPSO/SCOR WG is in the planning, WG 122 on Estuarine Sediments Dynamics. Finally, IAPSO will pursue a collaborative project with SCOPE (Scientific Committee on problems of the

Environment in ICSU). The project preliminary title is "Physics and Chemistry as the Key to Marine Ecosystems Dynamics and Structure (PACKMEDS). SCOR is invited to join the project.

No questions were asked at this time.

International Association for Seismology and Physics of the Earth's Interior (IASPEI)

Dr. Brian Kennett, President of IASPEI, reported that there have been major advancements in seismic work in recent years, in particular in the capacity to model both seismic wave propagation in 3-D and the nature of source processes. The combination of such advances enables better simulation for seismic ground motions for events (both real and potential) and thus provides a basis for better disaster prevention and forecasting.

The past four years has seen a realignment of the Commission structure within IASPEI to provide a closer tie to the major themes which are used for constructing meeting programs.

IASPEI is very conscious of the need to develop programs in developing countries, and to draw in new scientists. A substantial part of the Association's budget has been devoted to support for travel grants and projects in and with developing countries. The 2001 Assembly was held jointly with IAGA in Hanoi, Vietnam and drew a good regional attendance. This meeting also provided an excellent opportunity for synergistic studies on the nature of the Earth's Deep Interior with the help of IAGA and SEDI. The 2005 IASPEI assembly will be held in Santiago, Chile, in October 2005, and it is planned to have added schools and workshops during this time in order to expand IASPEI science into Latin America.

No questions were asked at this time.

International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

Dr. Steve Sparks, President of IAVCEI, reported that today, over 500 million people live close enough to volcanoes to be affected if they were to erupt. IAVCEI contributes to a very detailed database on geological explosions, and is compiling a database of all the activities leading up to the eruptions. IAVCEI has initiated a volcanic hazard atlas for worldwide distribution. Disaster prevention through an informed public is a significant effort within IAVCEI and

they are updating for re-distribution, an information video regarding volcanic hazard. The next IAVCEI scientific assembly will be held in Pucon, Chile, and the new president will be Oded Navon (Israel).

No questions were asked at this time.

10a. Review of IUGG Inter-Association bodies Examen des Comités inter-Association de l'UGGI

President Kono announced that for bodies listed in Agenda item 10, a report was provided in the Council Agenda book. Due to time constraints, only brief comments would be made. Specific questions or comments would then be entertained.

- Commission on Geophysical Risk and Sustainability (GeoRisk)

Activities have been commendable during their first term, and support will be increased for the next term from \$5000 to \$6000 per year.

- Committee on Geophysics: The Future (GTF)
Dr. Uri Shamir introduced Laura Sanchez, the Council Delegate from Colombia, who is a member of the Committee. Delegates were invited to the Union symposium U8 on Friday July 11. A question was raised about availability of the document prepared by the Committee. It will be available on CD-Rom and will be posted on the IUGG Web site.
- Committee on Mathematical Geophysics (CMG)
On behalf of the IUGG Executive Committee (EC), President Kono reported that CMG has become detached from IUGG and is not very well known among the Associations. The EC has decided to reduce their budget and request that they improve their relationship with the Associations.
- Committee on Studies of Earth's Deep Interior (SEDI)
The activities of SEDI have been quite good and the EC decided to maintain their level of support.
- Committee on IGY+50
IUGG appointed a committee in September 2002, to plan and coordinate events that would mark the 50th anniversary of the International Geophysical Year (IGY). Unfortunately, the Committee, chaired by Michael Kuhn (Council Delegate from Austria) has only recently begun activities. But the International Union of Geological Sciences (IUGS) has been pursuing an aggressive initiative entitled "planet earth" that includes a proposal to ask the United Nations to declare an International Year of Planet Earth. The IUGG EC decided to work with IUGS as full partner in this initiative, and asked the two committees to coordinate their activities closely. IGY+50 meetings will be held at this General Assembly.
Dr. Malkki (Finland) asked about the IUGG position on the International Polar Year (IPY), another initiative being planned to commemorate the IGY, and suggested that the Council decide in principle to participate in the IPY and support them to the greatest extent possible. Dr. Kuhn replied that this would be discussed at the IGY+50 planning meetings at the General Assembly.
Dr. Malkki asked further if IGY+50 was a celebration or research program. Dr. Kono replied that in 1999, the suggestion was simply to celebrate the event. However, since then the mood had changed and the Associations were now enthusiastic to incorporate scientific initiatives in these activities. Dr. Davies (Switzerland, and President of IAMAS) noted that the World Climate Research Programme might be interested in combining the IGY+50 and IPY into one program with a global emphasis on gathering atmospheric data. Dr. Tyson (representative from ICSU) reported their wish to prevent duplication of efforts and to join forces to plan coordinated events. No further questions were asked of Dr. Kono or Dr. Kuhn.

10b. Relations with special ICSU Committees

Relations avec les Comités Inter-Union particuliers du CIUS

- Federation of Astronomical and Geophysical Data Analysis Services (FAGS)
Dr. Joselyn referred to the report in the Agenda book. The new Chair of FAGS, Dr. David Pugh, has arranged a meeting on Tuesday afternoon and Council members were invited to attend. Assuming Council concurrence, Ruth Neilan has agreed to replace Martine Feissel-Vernier as the IUGG liaison to FAGS. The IUGG Executive Committee voted to continue an annual subvention of \$12,000 to FAGS, but renewable each year (a change for the former circumstance of an automatic subvention each year).
- Initiative on Science for Health and Well-Being
Dr. Joselyn explained that this ad hoc initiative arose from inter-Union discussions at the recent ICSU General Assembly in Rio de Janeiro, Brazil. It may or may not continue based on Union response. An IUGG liaison is needed for this initiative although Dr. P. Hubert and Dr. J.A. Joselyn have been serving in that capacity and could continue.

10c. Relations with ICSU Commissions and Committees (renewal of liaison officers)

Relations avec les Commissions et Comités scientifiques du CIUS (renouvellement des responsables de liaison)

Dr. Joselyn noted that the reports from each liaison of the past term were included in the Agenda book. A list of proposed liaisons to each of the ICSU commissions and committees for the next term was distributed, and discussion was as follows:

- on Antarctic Research (SCAR)
Dr. R. Schlich (France) pointed out that a diagram that he sent with his report had not been included in the Agenda book. The Secretariat apologized for the omission. Dr. Schlich agreed to continue as the SCAR liaison for the coming term.
- on the International Geosphere - Biosphere Programme (IGBP)
Dr. C.J.E. Schurrmans provided the report in the Agenda book. At this time, a new liaison was being sought.
- on the Lithosphere (SCL/ILP)
Dr. S. Gregersen provided the report in the Agenda book. Dr. E.R. Engdahl agreed to serve as the IUGG liaison for the next term.
- on Oceanic Research (SCOR)
Drs. P. Rizzoli, R. Duce and H. Davies provided the report in the Agenda book. The new IAPSO and IAMAS presidents (Dr. S. Imawaki and Dr. M. MacCracken, respectively) will serve jointly as IUGG liaisons to SCOR for the next term.
- on the Problems of the Environment (SCOPE)
Dr. N.J. Peters provided the report in the Agenda book; he agreed to continue as the SCOPE liaison for the coming term.

- on Science and Technology in Developing Countries (COSTED)
Dr. V Gaur provided the report in the Agenda book. COSTED, as such, has been concluded by action of the ICSU Executive Board, as pointed out by Dr. Ashour (Egypt). Dr. H. Gupta informed that ICSU is placing a new structure of regional offices in Asia, Africa, the Middle East and Latin America / Caribbean for developing countries. Dr. H. Gupta agreed to be IUGG liaison for ICSU on developing countries.
- on Solar-Terrestrial Research (SCOSTEP)
Prof. W. Baumjohann provided the report in the Agenda book and agreed to continue as the SCOSTEP liaison for the coming term.
- on Space Research (COSPAR)
Dr. E. Friis-Cristensen provided the report in the Agenda book, and agreed to continue as the COSPAR liaison for the coming term.
- on Water Research (SCOWAR)
Dr. J. Rodda provided the report in the Agenda book. ICSU terminated the activities of SCOWAR at their Brazil General Assembly, thereby eliminating the need for a liaison.

10.d Relations with inter-governmental and other organizations (renewal of liaison officers)
Relations avec les organisations inter-gouvernementales et autres organismes (renouvellement des responsables de liaison)

- Cartographic Office of the United Nations
Dr. J. Kakkuri provided the report in the Agenda book. Dr. H. Drewes, nominated by the International Association of Geodesy (IAG), has agreed to serve as the IUGG liaison for the coming term.
- International Civil Aviation Organization (ICAO)
Dr. G. Heiken provided the report in the Agenda book. Dr. W. Rose, nominated by the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) agreed to serve as the IUGG liaison for the coming term.
- Panamerican Institute of Geography and History (PAIGH)
Dr. W. Torge provided the report in the Agenda book. Dr. H. Drewes, nominated by the International Association of Geodesy (IAG), agreed to serve as the IUGG liaison for the coming term.
- UNESCO/Solid Earth and Geodesy
Dr. R.D. Adams provided the report in the Agenda book. Because IUGS has excellent relations with the Solid Earth and Geodesy component of UNESCO, he recommended that a new liaison was not needed and none was appointed.
- UNESCO / International Oceanographic Commission (IOC)
Dr. P. Rizzoli combined her report on the IOC with the report on SCOR. She agreed to serve as the IOC liaison for the coming term. It was pointed out that David Pugh is the incoming President of the IOC and will also be able to advise IUGG on IOC decisions and actions.
- World Meteorological Organization (WMO)
Prof. R. List provided the report in the Agenda book on both WMO and the World Climate

Research Programme (WCRP), and has agreed to continue for the next term. In addition, Dr. P. Hubert, Secretary General of the International Association of Hydrological Sciences (IAHS), also agreed to serve as a liaison to WMO for the coming term.

IAHS suggested that IUGG appoint a new liaison to UNESCO's International Hydrological Programme; Dr. P. Hubert agreed to serve in this capacity.

Dr. Kono asked if the Council could approve appointment of the named liaisons. Dr. Berger (Belgium) asked for additional information about the source of the nominations for these positions. Dr. Joselyn replied that the Associations were the source of the nominations. Dr. Lenk (Turkey) asked if further nominations could be suggested. Dr. Joselyn replied that suggestions of additional nominees were welcome for the several posts not yet filled, if they were received before the final Executive Committee meeting on 8 July. Dr. Barton (Australia) asked why IUGG does not have a liaison with UNESCO itself. Dr. Kono replied that IUGG preferred to maintain ties with several groups within UNESCO and also with IUGS, who has a strong relationship with UNESCO. This has seemed to serve us better especially since ICSU and UNESCO work closely together. Dr. Urrutia-Fucugauchi (Mexico) asked if the Associations could also assign liaisons to these bodies. Dr. Kono replied that yes, some Associations did have strong and beneficial ties with specific organizations in addition to the IUGG liaison. Dr. Stewart (Canada) asked how IUGG keeps in contact with the liaisons. Dr. Joselyn replied that contact occurred when quadrennial reports are required and if the liaison applied for financial support to attend a meeting. It was agreed that communications could and should be improved, both between the liaisons and the IUGG Executive committee and between IUGG and the National Committees.

Finally, Dr. Kono asked the Council to approve the IUGG liaisons as presented for the coming term, and there was no dissent.

11. Report of the IUGG Finance Committee
Rapport du Comité des finances de l'UGGI

- Review of the 1999-2003 Quadrennium, and
- Review of Categories of Member Adhering Bodies (By-Law 11.g)

Dr. F. Spilhaus, Chair of the Finance Committee, referred to the report in the Council Agenda book, but based his remarks on a supplementary report "The Quadrennium, Membership, and the Budget" that was distributed to the Council members at the meeting, as well as the "Proposed IUGG Budget 2004-07." He noted, with concern, the shrinkage in IUGG income owing to loss of dues. A few countries, notably the Czech Republic and Sweden, have raised their category but many more have either decreased their category or ceased membership entirely. In the period that ended in 1990, there were 314 units paid on average each year. That number dropped to 290 over the next two periods and is now estimated to be 250 units for the current period. He stated that new paying members are needed in order to sustain the Union, and that an action plan should be formulated. Referring the Union's funds-in-reserve (approximately \$500,000 USD), the Finance Committee advises that the reserve should not shrink below \$420,000, approximately our annual income, in order to accommodate changes in the economy and assure protection of operating costs. Discussion was invited.

Dr. Stewart (Canada) asked when the Council would discuss the action plan. Dr. Spilhaus replied that the Finance Committee was only suggesting that the Union should formulate such a plan. Dr. Sava (Romania) affirmed that it was important to address the issue of recruiting new members. Dr. Kono commented that he and the Secretary General had sent quite a number of letters, and had directly approached several countries in pursuit of new members but with only very limited success. At this General Assembly, two countries attended a “non-members meeting,” organized following the suggestion of Dr. M. Hamlin. Two additional countries, now in observer or Associate status, also attended. President Kono emphasized that it was important for these countries to become full paying members. Dr. Kono invited suggestions from the Council Members to promote membership. Dr. Stewart (Canada) approved of the informal meeting of non-members, but asked why there was not an informal meeting of members. Dr. Kono agreed that such a meeting could be valuable. Dr. Ashour (Egypt) asked what had been done to ask current members to increase their category of membership? Dr. Spilhaus said that the Finance Committee had approached several countries, asking them to increase their category. Dr. Jackson (USA) said that the USA had been asked and that the National Committee had voted to do so (pending approval by their Adhering Body, the National Academies of Science). Dr. Ashour further asked about the formula that the Finance Committee used to determine an appropriate category for a member country. Dr. Spilhaus agreed to write a document that could be posted on the IUGG web site. Dr. Shamir pointed out that dues was not the only factor in recruiting membership, but that scientific issues and building a network to encourage science especially in developing countries was also important. Dr. Camfield, Secretary General of IAPSO, reported his success to recruit the Republic of Mauritius for Associate Membership; they had been asked to join in Category 1 but this was not approved by their Adhering Body. Nevertheless, they are now IUGG members and new partnerships can be forged. Dr. Stewart returned to the possibility of an informal meeting of the Council Members. It was later determined that such a meeting would be possible during the hour preceding the final formal Council meeting on 9 July. Dr. Stewart agreed to formulate an agenda and facilitate the meeting.

12. Presentation and Adoption of the 2004-2007 Budget Présentation et adoption du budget 2004-2007

Dr. A. Hansen presented the proposed budget that is conservative and maintains a level of activity approximately as it has been in the last period. He noted that income is almost exclusively member dues because income from interest on reserve funds is essentially negligible in today's economic climate. Considering expenditures, half of the income is allocated to the Associations; they decide at Executive Committee meetings which inter-Associations activities to support.

Compared with the 2000-2003 budget, much expenditure is the same. There is a decrease in Line 11: Administration, reflecting the experience of the past four years. There is an increase in Line 14: Symposia, responding to increased demand. Line 17: Union, was added to better define expenditures previously included in line 15: Associations. Line 18: Countries in Need, continues support for inter-Associations initiatives that benefit Developing Countries, first introduced in 1999, but at a slightly reduced amount to compensate for the increased support for Symposia. Travel grants for next General Assembly remain the same: \$70,000. Dr. Hansen

noted that the Finance Committee had approved this budget and he put it forward for discussion and vote by the Council members.

Dr. Gregersen (Denmark) asked about an apparent reduction in line 16.2 regarding payments to the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) and the International Lithospheric Programme (ILP). The reduction of \$5000/year from the budget for the previous term is due to the expiration of the ILP Earthquakes and Megacities Initiative (EMI) that previously had been included in that line. These funds are now allocated to the new Union budget line. Dr. Jackson (USA) asked about the ICSU dues (Line 16.1). Dr. Hansen replied that this is an estimate. IUGG paid dues to ICSU in 2003 of \$13,472 but the dues increase each year based on inflation. Dr. Stewart (Canada) asked if there were any other potential sources of income, perhaps the General Assemblies. Dr. Kono replied that a special arrangement was made for the 1999 (Birmingham) GA in which IUGG agreed to share the financial burden, profit or loss. While we were fortunate that the Birmingham Assembly returned a surplus, and therefore provided some income to IUGG, it could have been a loss. The 1999 Council therefore resolved that the host of the General Assembly should be asked to carry the entire financial burden for the Assembly. Dr. Menvielle (France) expressed annoyance that there is increase of IUGG dues every year. The French delegation has an obligation to vote against this kind of structure because their Adhering Body will not support these kind of budgetary changes. Dr. Hansen replied that this structure, an annual increase in dues based on inflation, was adopted in 1995 (Boulder). Dr. Hamlin (Finance Committee) pointed out that this issue had also been raised by the British National Committee because the increases seem to be random and non uniform. Dr. Spilhaus explained that these are not real increases, rather they are simply keeping up with the current purchasing power that is eroded by inflation. Dr. Kennett (President, IASPEI) suggested that the dues be adjusted only every four years, so that the National Committees do not need to alter their budgets annually. But Dr. Gregersen (Denmark) replied that a large jump in dues representing the accumulated increase due to inflation over 4 years is difficult for many countries to handle. The present system seems advisable especially because currency fluctuations sometimes have a greater influence on the local annual dues payment than the requested increase due to inflation.

Dr. Kono asked if the Council would vote. Because this was a financial issue, the votes were weighted by the Category of membership of each Adhering Body. Of the 137 units that were voted, 114 were in favor, 16 were opposed, and 7 abstained. The approved budget is attached below.

7. (Continued from the First Council Meeting) Proposed Changes of Statutes and By-Laws Propositions de changements des statuts et du règlement intérieur (U. Shamir)

To aid in the discussions, copies of the current Statutes and By-laws were distributed to all Council Members. Dr. Shamir thanked the members of the ad hoc committee that redrafted the proposed changes in response to the discussions at the first Council Meeting.

The revised proposal from the United States of America was addressed first. The essential points were that one person from each Associate Member may attend any Council meeting as Listener, without the right to speak, and that other individuals may, with concurrence of the President, attend council meetings as Listeners only, with

the provision that a simple majority of the Council could declare any part of any meeting closed to Listeners. The Delegate from the USA, Dr. David Jackson, was asked to comment. He said that the purpose of this proposal was to provide openness, while at the same time maintaining order and effectiveness of the meetings. He asked that the Council approve the modified proposal.

Prof. Merry (South Africa) asked for clarification about additional persons from Associate Member countries. The response was that these individuals would be able to enter on the same level as any other guests, subject to the same rules. Dr. Ashour (Egypt) opposed the proposal, declaring that it detracted from the ability of the Council to conduct business efficiently and confidentially. Dr. Shamir instructed the delegates to use Ballot # 12 to record their vote: 'Yes' accepted the modified proposal to permit more open attendance at the Council meetings, 'no' rejected the proposal. Or, there was a place on the ballot to choose to abstain. The ballot results were 34 yes; 5 no; and 1 abstention. The modified proposal passed.

Dr. Shamir then presented the modified Danish proposal to restructure the Finance Committee. Major changes included the number of persons to be elected (four); those eligible for election (the slate of candidates would have two sections – Council members and former Finance Committee Members in order to preserve continuity); a provision that the Chair of the Finance committee should attend meetings of the Bureau and Executive Committee when financial matters were on the agenda; and modification of the duties and relative roles of Finance Committee and Treasurer. Dr. Shamir then asked Dr. Gregersen, the Danish Council Delegate, to make a statement. Dr. Gregersen announced that the objectives of the original Danish proposal addressing overlaps in the duties of the Finance Committee and Bureau in the existing Statutes and By-Laws had been removed and that the Treasurer and Executive Committee now had a greater role and responsibility to prepare an economically responsible budget. Dr. Ashour (Egypt) asked what would happen if there was a tie vote among the members of the Finance Committee, and he asked for clarification about which Council members (the old or new ones) were eligible as candidates for the Finance Committee. The replies were that the Finance Committee duties are advisory only and that decisions requiring a vote were not expected, and that nominations of Council Members to the Finance Committee would be made from the body of "old" Council members but that the rules permit nominations of "new" Council members prior to the elections. Dr. Shamir instructed the delegates to use Ballot # 13 to record their vote: 'Yes' accepted the modified proposal, 'no' rejected the proposal. Or, a delegate could choose to abstain.. The ballot results were 37 yes; 2 no; and 1 abstention. The modified proposal passed.

The full version of the revised Statutes and ByLaws will be posted on the IUGG Website and printed in the Comptes Rendus.

13. IUGG Goals and Vision

Objectifs et perspectives de l'IUGG

- Report of the Questionnaire on IUGG Structure, Goals and Objectives for the Quadrennium and Long-Term
- Proposal from the USA National Committee

Dr. H. Gupta presented the report included in the Council Agenda book, and asked the delegates to familiarize themselves with this document, which summarizes the responses to questionnaires sent to all

Adhering Bodies and the Associations. The responses were organized into groups, as presented. Some of the results were that IUGG should pay more attention to their dues paying members; and that neither the number of members on the Bureau nor the non-permanent location of the secretariat were issues. Support for young scientists was encouraged, and the Geophysics: the Future (GTF) group, organized by Dr. Shamir is one of the actions in this direction. Better communications were requested and continuing publication of the e- (Electronic)-Journal was encouraged. These are just a few of the outcomes of this effort conducted by the Bureau over the last 4 years.

At this point, Dr. Kono asked that discussion on the report of the Committee and the proposal from the US National Committee be held until the final Council meeting because the time to close the meeting had passed.

The Second Council meeting closed at 5:25 pm. Delegates were reminded that while the third Council meeting would begin at 4 pm on 9 July, all Council Delegates were invited to arrive an hour early (at 3 pm) for informal discussions.

Approved IUGG Budget 2004 – 07

All figures, except the value and number of units, are in thousands of US dollars

Year	2003	2004	2005	2006	2007	2004 – 07 total
Estimated unit value	\$1,455	\$1,484	\$1,514	\$1,544	\$1,575	
Estimated number of units		250	248	246	244	
RECEIPTS						
1. MEMBERSHIP SUBSCRIPTION	341.6	371.0	375.4	379.8	384.3	1510.6
2. ICSU GRANTS						
3. ASSEMBLY SURCHARGE					0.0	
4. CONTRACTS, ICSU						
5. SALES OF PUBLICATIONS	1.1	0.2	0.2	0.2	0.2	0.8
6. MISCELLANEOUS	5.4	5.0	5.0	5.0	5.0	20.0
7. TOTAL RECEIPTS	348.1	376.2	380.6	385.0	389.5	1531.4
8. BALANCE 1/1		480.7	501.4	494.9	510.6	
EXPENDITURES						
11. ADMINISTRATION						
11.1 Personnel		10.0	10.0	10.0	10.0	40.0
11.2 Quarters		0.0	0.0	0.0	0.0	0.0
11.3 Supplies		2.5	2.5	2.5	2.5	10.0
11.4 Communication		8.0	8.0	8.0	8.0	32.0
11.5 Travel, organizational		40.0	60.0	40.0	80.0	220.0
11.6 Miscellaneous		1.0	1.0	1.0	5.0	8.0
11.7 Travel, representative						
12. PUBLICATION AND PRINTING						
12.1 Yearbook	0.0	5.0	5.0	5.0	5.0	20.0
13. ASSEMBLIES						
13.1 Organization		0.0	0.0	0.0	10.0	10.0
13.2 Travel Grants		0.0	0.0	0.0	30.0	30.0
14. SYMPOSIA						
14.1 Symposia		20.0	20.0	20.0	5.0	65.0
15. ASSOCIATIONS						
15.1 Allocations		174.1	185.6	187.8	190.0	737.5
15.1a Associations		163.4	174.9	177.1	179.3	694.7
15.1b SEDI, CMG, WCRP		10.7	10.7	10.7	10.7	42.8
16. DUES AND GRANTS						
16.1 ICSU		16.0	16.0	16.0	16.0	64.0
16.2 Inter-Union Science (FAGS)		29.0	29.0	29.0	29.0	116.0
17. UNION						
17.1 GeoRisk (6k), IGY+50, Liaison		20.0	20.0	20.0	20.0	80.0
18. COUNTRIES IN NEED						
18.1 Initiative Grants		25.0	25.0	25.0	25.0	100.0
18.2 Travel Grants		0.0	0.0	0.0	40.0	40.00
19. MISCELLANEOUS						
19.1 Miscellaneous		3.0	3.0	3.0	3.0	12.0
19.2 Professional Services		2.0	2.0	2.0	2.0	8.0
20. TOTAL EXPENDITURES		355.6	387.1	369.3	480.5	1592.5
21. BALANCE 12/31		501.4	494.9	510.6	419.6	-61.1

Friday, 4July, 2003

Finance Committee
4 July 2003

THE QUADRENNIUM, MEMBERSHIP AND THE BUDGET

The activities of the Finance Committee since the Birmingham General Assembly have been reported to you in the Agenda Book. This addendum focuses on what has changed since we developed the first draft of the budget in January and on a very few structural and financial issues that you should bear in mind as you consider the budget that is to be presented to you. These issues are the paying membership, the reserves of the Union, and the budget.

The bottom line is that the funds available for our good work are limited and shrinking. They will always be limited but they must not shrink further or the Union will be in jeopardy.

IUGG has only two sources of discretionary income, interest on its reserve and operating cash, and Member subscription fees. The latter is 98% of the total. The Associations are allocated approximately one-half of that income; the remainder is what the Union has to support its infrastructure and to undertake all of its scientific activities. The number of paying Members and the category of each determines how much the Union, and to a varying extent dependent on other resources, what the associations can do.

Member subscription fee income has risen in every quadrennium until this one. The rise is largely attributable to the inflationary increase in the unit that has offset a steady decrease in units. Over the last 20 years there has been an 80% increase in the unit and a 40% increase in income. Annualized that 40% is about 1.7% per year. We have lost significant ground financially.

In the period that ended with 1990 we had 314 units paid on average per year. That number dropped to 290 over the next two periods and plummeted to an estimated 250 in the current Period. If paying membership continues to drop beyond what is forecast in the budget changes in expenditure will have to be made midstream to assure continued viability. Recruiting new paying Members to the Union must be a high priority for everybody in the governance structure of the Union and the Associations. We should not leave this General Assembly without an action plan.

The size of the Union's reserve gives some people comfort. Additions to it achieved by great frugality and selfless hard work on the part of all who serve the Union have also given a false sense of security. Just last year the Treasurer anticipated a balance of \$610 thousand at the beginning of the next period. Largely

due to reduced Member payments that number is now expected to be \$480K. If the proposed budget works out the balance will shrink to \$420K by the end of 2007. That number, approximately one year of revenue, is one that we should not go below.

Why do we need such a reserve? Our reserve has several purposes: operating cash when expenses are higher than the incoming payments, insurance to allow limited operations in periods of economic downturns or conflict that restrict the incoming cash and on the happy side for investment in the future. The Treasurer can mete out payment to the Associations to control cash flow and pay certain obligations more slowly than others. These actions visit the Union's lack of cash on others and are counter productive in the long run. A cushion of at least \$200K is needed for this purpose. That means that with another \$200K the Union has less than a year to make adjustments to serious economic changes whatever their cause. It is essential that the Treasurer and the Finance Committee monitor the state of the reserves on at least an annual basis.

We believe that with the kind of management the Union has had the budget presented will be workable and serve the Union well. There is flexibility to cut expenditures in very few places but if income is short the Bureau and Executive Committee will have to make hard decisions. In four years, if Member income is not increased, it will be necessary to cut about \$100K from the budget offered today. The most likely targets for reduction are perforce the "countries in need" program and the inter-Union science.

A.F. Spilhaus, Jr., Chairman
P. Pinet, Secretary
E. Groten
V.K. Gaur
M.J. Hamlin

MINUTES OF THE COUNCIL MEETINGS

MINUTES OF THE THIRD IUGG COUNCIL MEETING

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Date: Wednesday July 9, 2003 (4-7pm)

Place: Empress Hall A&B, Royton Hotel

Participants:

- National Delegates at Council:

<i>Argentina</i>	<i>Dr. Juan Vilas</i>
Australia	Dr. Charles Barton
Austria	Dr. Michael Kuhn
Belgium	Prof. Andre L. Berger
Brazil	Dr. Luiz Palo Souto Fortes
Canada	Dr. Ronald E. Stewart
Chile	Dr. Pablo Gran
China	Prof. Chuanzhen Zhu
Colombia	Eng. Laura Sanchez Rodriguez
Croatia	Prof. Dr. Mirko Orlic
Czech Republic	Dr. Petr Holota
Denmark	Dr. Soren Gregersen
Egypt	Prof. Attia A. Ashour
Finland	Prof. Dr. Pentti Malkki
France	Dr. Michel Menvielle
Germany	Prof. Dr. Gerd Tetzlaff
Hungary	Prof. Dr. Jozsef Adam
Iceland	Mr. Pall Jonsson
India	Dr. Vijay P. Dimri
Indonesia	Mr. H.Z. Abidin
Iran	Dr. Dr. S. Hajam
Ireland	Dr. Peter Lynch
Israel	Prof. Zev Levin
Italy	Prof. Lucio Ubertini
Japan	Prof. Kojiro Irikura
Jordan	Eng. S.M. Khalifeh
New Zealand	Dr. David A. Rhoads
Norway	Dr. Bjorn Geirr Harsson
Poland	Prof. Dr. Jan Krynski
Portugal	Prof. Dr. Luis A. Mendes-Victor
Romania	Dr. Constantin S. Sava
<i>Russia</i>	<i>Dr. Yuri S. Tyupkin</i>
Slovenia	Mrs. L. Globovnik
South Africa	Prof. Charles L. Merry
Spain	Dr. Dr. Joan M. Torta
Sweden	Dr. Birna Olafsdottir
Switzerland	Prof. Dr. Huw C. Davies
Thailand	Major General T. Thambumroong
Turkey	Dr. Lt. Col. Eng Onur Lenk
United Kingdom	Prof. David N. Collins
United States	Prof. David N. Jackson
Vietnam	Prof. Dr. T.K.T. Nguyen

Italics for Countries with Observer Status only

- Members of the Bureau

President	Prof. Masaru Kono
Vice President	Prof. Uri Shamir
Treasurer	Dr. Aksel Hansen
Secretary General	Dr. JoAnn Joselyn
Asst. Sec. Gen.	Mr. Ryan Aucone
Member	Dr. Tom Beer
Member	Dr. J.Y. Chen
Member	Dr. Harsh Gupta

- Members of the Finance Committee:

President	Dr. A. Fred Spilhaus
Secretary	Dr. Patrick Pinet
Member	Prof. Michael J. Hamlin
Member	Prof. Vinod K. Gaur
Member	Prof. Dr. Erwin Groten

- The Executive Committee and Secretaries-General of the Associations:

Past President	Prof. Peter Wyllie
President IAG	Prof. Fernando Sanso
Secretary IAG	Prof. Christian Tscherning
President IAGA	Dr. David Kerridge
President IAHS	Dr. Kuniyoshi Takeuchi
Secretary IAHS	Dr. Pierre Hubert
President IAMAS	Prof. Dr. Huw Davies
President IAPSO	Dr. Paola Rizzoli
President IASPEI	Prof. Brian Kennett
President IAVCEI	Prof. Steve Sparks

- The following alternate Council Delegates attended the Third Council Meeting:

France	Dr. Jean-Pierre Barriot
	Dr. Roland Schlich

- The President invited the following guests for the Third Council Meeting:

Member Candidate	Dr. Y.T. Chen
IAG Pres. Elect	Dr. G. Beutler
IAMAS Pres. Elect	Dr. M. MacCracken

1. Greetings, Presentation of the Credentials : Salutations: Présentation des lettres d'accréditation

Following a successful informal meeting of the Council Delegates, President Kono called the third Council meeting to order at 4:10 pm in the Highness AB room. In order to be certain of the number of Delegates present and able to vote, a roll call of delegates was held. 35 national delegates were present, 33 eligible to vote. Secretary-General Joselyn further read the sections from the IUGG Statutes and By-laws concerning votes by correspondence. The ballots from 3 delegates were received in advance of the meeting and in accordance with the rules. Those delegates were Prof. Berger (Belgium), Prof. Liu (China-Taipei), and Dr. Moon (Korea). Other national delegates arrived in the course of the meeting and Dr. Berger was obliged to leave. In total 42 votes were accredited.

Although some discussion remained on Agenda Item 13, President Kono decided to proceed with Agenda Item 14.

**14. Elections of IUGG Officers (Ref. Agenda Item 5)
Election des responsables de l'UGGI (Cf point 5 de
l'ordre du jour)**

Dr. Lynch (Ireland) asked if the order that the names were printed on the ballots was significant. President Kono replied that the order was chosen by the Nominations Committee. Dr. Lynch suggested that the names on the ballot should appear in alphabetic order. Continuing on the topic of nominations, Dr. Kono expressed his disappointment that one person who had been nominated for an office withdrew his name just before the General Assembly. Dr. Kono hoped that in the future, any person who agreed to be nominated would not take this honor so lightly. He also emphasized that the elections of officers and the selection of the site for the 2007 General Assembly were independent votes and the results of the elections for officers should have no influence on the site selection.

Delegates were asked to mark their ballots for each of 6 offices open for the Bureau (the office of Secretary General was elected for an 8-year term in 1999) and the 5 positions on the Finance Committee. President Kono asked Dr. Fred Spilhaus and Dr. Steve Sparks to assist with counting the ballots, numbered 16-26 in the Ballot Books.

While the ballots were being counted, Dr. Kono took the opportunity to present mementos of appreciation to Dr. Uri Shamir for his 8 years of service as IUGG Vice-President; to Dr. J.Y. Chen for his 12 years of service on the IUGG Bureau; Dr. E. Groten for his 8 years of service on the Finance Committee; and Dr. A.F. Spilhaus, Jr., for his 16 years of service on the Finance Committee including 4 years as the Chair.

Other announcements made while the votes were being counted included preliminary statistics of the persons attending the General Assembly, and information about the IUGG promotional video/DVD prepared by special arrangement for the General Assembly by NHK – a Japanese television network. It was explained that IUGG owns the video but that the copyright must remain with NHK. Each delegate/IUGG Adhering Body may have a copy but must agree that the copies will be shown for educational/non-profit purposes only. There is no charge for the first copy to each Association and National Committee, but after that, the Secretariat may have to charge for the cost to copy and mail either a DVD or videotape.

The tellers announced the preliminary count of the votes. The counts given below are the final counts.

- a. President**
U. SHAMIR: 27, W.R. PELTIER: 13, 2 Abstention.
- b. Vice-President**
P. RIZZOLI: 20, T. BEER: 21, 1 Abstention
- c. Treasurer**
A.W. HANSEN: 40, 0 Opposed, 2 Abstentions
- d. Bureau Members**
Position 1: A. TEALEB: 36, 0 Opposed, 6 Abstentions
Position 2: A. NIKOLAEV (name withdrawn): 8, H.K. GUPTA: 31, 3 Abstentions
Position 3: Y.T. CHEN: 21, C.S. SAVA: 17, 4 Abstentions

- e. Finance Committee**
Position 1: D.D. JACKSON: 37, 1 Opposed, 4 Abstentions
Position 2: M.J. HAMLIN: 24, P. PINET: 16, 2 Abstentions
Position 3: B.L.N. KENNETT: 39, 1 Opposed, 2 Abstentions
Position 4: V.K. GAUR: 18, K. SUYEHIRO: 23, 1 Abstention
Position 5: M.E. PERILLO: 14, J. VILAS: 20, 8 Abstentions

Dr. Kono therefore declared the following officers for the 2003-2007 term:

President: Dr. Uri Shamir (Israel)

Vice President: Dr. Tom Beer (Australia)

Secretary General: Dr. Jo Ann Joselyn (U.S.A.)

Treasurer: Dr. Aksel Hansen (Denmark)

Bureau Members: Dr. Y.T. Chen (China), Dr. H. Gupta (India), Dr. A. Tealeb (Egypt)

Finance Committee Members: Dr. M. Hamlin (U.K.), Dr. D. Jackson (U.S.A.), Dr. B. Kennett (Australia), Dr. K. Suyehiro (Japan), and Dr. J. Vilas (Argentina)

**15. Selection of the venue of the XXIV IUGG General Assembly (2007) (Ref: AGENDA ITEM 8)
Choix du lieu de la XXIVième Assemblée Générale
(Cf point 8 de l'ordre du jour)**

Dr. Kono asked the delegates use Ballot number 27 to select the site of the 2007 General Assembly. The verified count of votes follows:
Perugia, Italy: 27, Melbourne, Australia: 14, 1 Abstention

**16. Presentation and Adoption of the Resolutions
Présentation et adoption des résolutions**

Dr. H. Gupta, Chair of the Resolutions Committee (other members were G. Balmino, R. Vincent, and K. Whaler) led the discussion of the Resolutions. He said that after the committee carefully reviewed the potential resolutions, they were discussed with the Associations at the Executive Committee meeting of 8 July. The final texts, in English and French, were projected on screens for the Council's consideration. The adopted Resolutions will be included in the Comptes Rendus, and will be posted on the IUGG web site.

Resolution 1: Geophysical Seafloor Observations:

No questions were asked. The delegates were asked to raise their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 2: Ocean Modeling:

No questions were asked. The delegates were asked to raise their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 3: Integrated Global Geodetic Observing System (IGGOS):

Dr. Sava (Romania) noted a typographical error that the Secretary General agreed to correct. Dr. Stewart (Canada) asked if IGGOS could be a goal for 2007. Dr. Beutler, incoming President of the International Association of Geodesy (IAG), indicated that in fact, timelines were in place. Dr. Barton (Australia) asked if this resolution was too specific to IAG to be a Union

resolution. Dr. Sava replied that global observing systems was a direction in which many Association were moving. Dr. Kono referred to a similar discussion in the Executive Committee meeting, but the outcome had been to present it as it was to the Council and to recommend that it be adopted. No further questions were asked. The delegates raised their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 4: Adoption of the resolutions B1.1 through B1.9 of IAU 24th General Assembly, 2000:

No questions were asked. The delegates were asked to raise their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 5: The impact of Biomass-burning aerosols on precipitation:

Dr. Levin (Israel) commented that this resolution had been discussed within the Commission on Clouds and Precipitation within IAMAS, but that the number of people who were there to discuss this issue was small, and several members of the Commission disagreed with this resolution. Dr. Jackson (USA) said that he was under the impression that industrial processes also produced aerosols and asked why these processes were left out. Dr. Davies (Switzerland, and President of IAMAS) said that the World Meteorological Organisation (WMO) intentionally focused this issue on biomass burning only even though pollution is mentioned in this resolution. Dr. Kono said that the Executive Committee discussed this proposed resolution in length and determined that the issue of the effects of biomass burning had serious implications and that the studies recommended by this resolution should be done. The delegates were asked to raise their hands to indicate acceptance or rejection. There were no votes against but 5 delegates voted to abstain. The resolution was therefore accepted.

Resolution 6: Data access under the Comprehensive Nuclear Test Ban Treaty:

No questions were asked. The delegates were asked to raise their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 7: Monitoring the Earth with Synthetic Aperture Radar:

No questions were asked. The delegates raised their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 8: MST/IS Radar in Antarctica:

No questions were asked. The delegates raised their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 9: Release of Airborne & Marine Magnetic Data:

Dr. Menvielle (France) commented that this resolution had been put forward by the International Association of Geomagnetism and Aeronomy (IAGA). While he did not oppose the resolution, he hoped that gravity data could also be included because gravity maps are very important. Dr. Sava (Romania) pointed out that another resolution had dealt with gravity data. Dr. Kono said that the members of the Executive committee had noticed that there were a number of resolutions that asked for the release of data. He suggested that this is an item that should be taken up by the new Executive committee.

The delegates raised their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 10: Inter-operability and Protection of Global Navigation Satellite System signals:

Dr. Lenk (Turkey) commented that in the context of the global navigation systems, the list presented was incomplete. Dr. Beutler agreed, but said that the additional systems were a matter for the future. Dr. Kono said that he thought that it was more productive to deal with the resolution as it stood.

No further questions were asked. The delegates raised their hands to indicate acceptance or rejection. The resolution was accepted unanimously.

Resolution 11: Resolution of Thanks:

The resolution was greeted with unanimous applause. There were no questions or comments.

13. IUGG Goals and Vision (Continued)

Since each of the third day's agenda items had been completed, Dr. Kono asked that the Council return to discussion of item 13 (Goals and Vision), which had not been finished at the second Council. He commented that efforts to make changes to IUGG should be constantly under consideration. In particular, he thanked Dr Stewart (Canada) for suggesting and leading the informal meeting of Council Delegates so that they could express ideas in an open forum, and asked him to comment on that meeting. Dr. Stewart said that the intent of the one-hour meeting was to promote a sense of community, and that he was delighted by the response. He reported that many National Delegates do not feel that they have an effective voice within IUGG, even though they are often the ones trying to defend IUGG in their home countries. Council members generally feel more closely linked to their Associations than to IUGG. Dr. Stewart agreed to summarize the sense of the meeting and to distribute them at a later time. Dr. Gregersen (Denmark) asked if this sort of meeting could occur before the Council meetings in 2007. Dr. Kono and Dr. Shamir both agreed that the meeting was beneficial and that the Union should arrange a similar meeting at the 2007 General Assembly. Dr. Menvielle (France) suggested that the Council needed a place to congregate throughout the General Assembly; this suggestion was welcomed.

Dr. Jackson (USA) then drew attention to the suggestion from the USA National Committee (included in the Council Agenda book) regarding involving the Council to generate an IUGG vision statement. He did not believe that informal discussions among the Council members adequately addressed this issue, and requested a formal response to the proposal by the USNC. Dr. Lynch (Ireland) agreed. Dr. Kono replied that at the second Council meeting the responses to the Bureau's questionnaire had been reviewed and a number of suggestions, including a revised mission statement, resulted. He thought that it was more appropriate to hand over all of these suggestions to the new Bureau and Executive committee and to ask them to prioritize and address them. Concerning the vision statement, Dr. Shamir agreed to place this issue on the agendas for future Bureau and Executive committee meetings, but suggested that all of the components of IUGG, the Associations as well as the Adhering Bodies, should be involved in the process.

Dr. Kono asked if there was anything else that the Council wished to discuss. Dr. Stewart (Canada) brought up the issue of the length of the General Assembly because the Canadian National Committee thought that it could be shortened. Dr. Kono replied that great deal of time had been devoted to discussing this issue at Bureau and Executive Committee meetings both before the General Assembly and at this General Assembly. Some Associations felt that one week was enough, yet others insisted that the full 2 weeks were needed. Because there was no consensus, it was decided not to change the format at this time. Dr. Shamir added that this issue was explicitly included in the IUGG questionnaire, and it had been recommended to continue with the two-week format. He further asked the delegates to consider their experiences at the Sapporo General Assembly, and think about the consequences of a shortened meeting (what would be lost?). Dr. Joselyn pointed out that for this Assembly changes had successfully been made to accommodate the wishes of some Associations to concentrate their symposia within one-week intervals, and that there were only 8 days between the first Council meeting on Tuesday July 1 and the last Council meeting on Wednesday July 9. Nevertheless, Dr. Jackson (USA) proposed an informal vote of the Council on the issue of one week versus two weeks. Dr. Lynch (Ireland) supported a vote but suggested that it be for information only. Dr. Davies (Switzerland) suggested that the Delegates did not have enough information about Association requirements and the overall structure of the General Assembly to make an informed decision at this time. Dr. Vilas (Argentina) expressed his support for the two-week format because he had personally gained much more knowledge in two weeks at the Assembly, especially on interdisciplinary topics, than would have been possible in only one week. Dr Levin (Israel) pointed out that in a short meeting, the scientists would have time only for their own disciplines and would not be able to interact with scientists in other Associations. Dr. Kono asked if there should be a vote. Dr. Gregersen (Denmark) replied that the issue had been discussed in the Questionnaire and there was no need to vote. Dr. Menvielle (France) also argued against voting because he believed that the Associations should make the determination. Dr. Kono noted the disagreement toward taking a vote and decided to pass the issue to the incoming Executive Committee for their further discussion.

Dr. Takeuchi, President of IAHS, asked to return to the agenda item regarding IUGG visibility because he thought it was very important. While the Associations could do a better job of including the IUGG logo on their publications and conference materials, he also wondered if there was some other kind of inter-Association activity that could be planned within the Union. Dr. Barton (Australia) said that one of the highlights of this Assembly has been the Union lectures not only because of their outstanding quality, but also because they addressed important societal issues. He stressed the value of bridging the current structure of the Associations to deal with the scientific issues that the IUGG member countries were facing. Dr. Hamlin mentioned the difficulty of Association symposia that overlapped the Union lectures. Dr. Menvielle (France) hoped that for the next General Assembly, the Associations would agree to support both the Union lectures and the Union symposia as opposed to competing with them.

Before closing the meeting, Dr. Kono addressed the impact that the health issue of Sudden Acute Respiratory Syndrome (SARS) had had on the Sapporo Assembly. He said that he appreciated the efforts made by IUGG National Committees to overcome the difficulties caused by the sudden outbreak of SARS in regions of several countries, and expressed sincere thanks to those scientists from SARS-affected areas for their understanding and willingness to co-operate with the Sapporo Local Organizing Committee. Many persons experienced problems with finalizing travel arrangements and some had to cancel their plans to attend because of the precautionary requirements. Nevertheless, these actions also contributed to the success of this General Assembly because those who did come, could do so with confidence that their health would not be compromised by this serious global outbreak.

Finally, Dr. Kono thanked all the delegates for their time and involvement in this Council, and especially their valuable opinions and comments. He also thanked the Bureau, the Executive Committee, and the Finance Committee members for their hard work and their vision of how to make a better IUGG. He said that in spite of the short time allowed to discuss Administrative matters during this Assembly, much had been accomplished. The Council meeting was closed at 6:31 pm.

OFFICERS ELECTED BY THE COUNCIL

OFFICERS OF THE UNION FOR 2003-2007

Bureau of the Union

<i>President:</i>	Uri Shamir	ISRAEL
<i>Vice-President:</i>	Tom Beer	AUSTRALIA
<i>Secretary General:</i>	Jo Ann Joselyn	USA
<i>Treasurer:</i>	Aksel W. Hansen	DENMARK
<i>Members:</i>	Yun-tai Chen	CHINA
	Harsh Gupta	INDIA
	Ali A.A. Tealeb	EGYPT

Executive Committee of the Union

According to Article 10 of the Statutes of IUGG the Executive Committee consists of:

- the Bureau (see above),
- the Retiring President of the Union, M. Kono (JAPAN)
- the Presidents of the International Associations:

<i>IAG:</i>	Gerhard Beutler	SWITZERLAND
<i>IAGA:</i>	Charles Barton	AUSTRALIA
<i>IAHS:</i>	Kuniyoshi Takeuchi	JAPAN
<i>IAMAS:</i>	Michael C. MacCracken	USA
<i>IAPSO:</i>	Shiro Imawaki	JAPAN
<i>IASPEI:</i>	E. Robert Engdahl	USA
<i>IAVCEI:</i>	Oded Navon	ISRAEL

Secretaries General of the International Associations

<i>IAG:</i>	C. Christian Tscherning	DENMARK
<i>IAGA:</i>	Bengt Hultqvist	SWEDEN
<i>IAHS:</i>	Pierre Hubert	FRANCE
<i>IAMAS:</i>	Roland List	CANADA
<i>IAPSO:</i>	Fred Camfield	USA
<i>IASPEI:</i>	Peter Suhadolc	ITALY
<i>IAVCEI:</i>	Steve McNutt	USA

Finance Committee of the Union

<i>Chair:</i>	Michael J. Hamlin	UNITED KINGDOM
<i>Members:</i>	David D. Jackson	USA
	Brian L.N. Kennett	AUSTRALIA
	Kiyoshi Suyehiro	JAPAN
	Juan Francisco Vilas	ARGENTINA

**RESOLUTIONS ADOPTED AT THE XXIII GENERAL ASSEMBLY
BY THE UNION – 9 JULY 2003
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

Resolution 1: Geophysical Seafloor Observations

The International Union of Geodesy and Geophysics,

Considering,

1. That measurements of the Earth's time varying gravitational field will soon be available, in particular over the oceans, from the CHAMP and GRACE satellite missions; and
2. That the gravitational field over the oceans and the pressure at the bottom of the oceans are both sensitive to changes in the distribution of mass within the oceans; and
3. That the magnetic field over ocean areas, which is to-day monitored by several satellites, undergoes variations related to activity in the core, induction, and global ocean circulation; and
4. That significant improvement of seismological observations can be achieved by enhanced coverage in the ocean basins; and

Recognizing,

1. That the value of assimilating data into ocean models; and
2. The importance of validating and calibrating satellite data and ocean models using *in situ* measurements; and
3. The benefits of enhanced global coverage of information on seismic sources and earth structure;

Recommends,

1. That regional and global networks of multidisciplinary geophysical seafloor observatories be deployed in all ocean areas; and
2. That efforts in this regard be coordinated through the International Ocean Network Committee.

Resolution 2: Ocean Modelling

The International Union of Geodesy and Geophysics,

Noting,

1. The value of ocean models for current, future and retrospective studies of the influence of the oceans on the Earth's rotation, deformation, gravitational field, and geocenter; and
2. The importance of having available models that conserve mass and are forced by atmosphere surface pressure; and

Recognizing,

1. The major investment in resources required to develop, maintain, and operate the ocean models that are used in such studies; and
2. The value of assimilating data into ocean models;

Recommends,

That support for such modelling activities be continued, including support for the development of forecast ocean models that conserve mass and are forced by surface pressure; and

Encourages,

The continued collaboration between geodetic and ocean modelling groups.

Resolution 3: Integrated Global Geodetic Observing System (IGGOS)

The International Union of Geodesy and Geophysics,

Recognizing,

1. The great progress made in the use of space and terrestrial techniques for monitoring the phenomena and processes in the System Earth during the last decades; and
2. The efforts made towards the integration of space techniques in the management of observations, data processing, evaluation, and modelling of the observable parameters, in particular by the different international services; and
3. The urgent need to further develop and strengthen the scientific and organizational collaboration of geodesy within the geosciences; and
4. The necessity of generation and accessibility of consistent products for users in Earth sciences, neighbouring disciplines and society in general; and

Considering,

That the International Association of Geodesy (IAG) has taken an initiative towards the realization of IUGG Resolution no.1 adopted at the 22nd General Assembly in Birmingham 1999 by installing the integrated Global Geodetic Observing System (IGGOS);

Strongly supports

The establishment of the IGGOS Project within the new IAG structure as geodesy's contribution to the wider field of geosciences and as the metrological basis for the Earth observation programs within IUGG and the international organizations mentioned in the 1999 Resolution no.1; and

Urges

That other associations cooperate with the new project by providing data, models, products, and know-how useful for IGGOS and the benefit of geosciences; and participate in the IGGOS project by joining the relevant components in its structure and assisting its symposia and meetings.

Resolution 4: Adoption of the Resolutions B1.1 through B1.9 of IAU 24th General Assembly, 2000

The International Union of Geodesy and Geophysics,

Noting,

1. That the International Astronomical Union (IAU) adopted the resolutions appended below at its 24th General Assembly in Manchester, England, August 2000, concerning definition of the celestial reference system, time scales, and Earth's precession and nutation; and
2. That the celestial reference system and the nutation-precession model have a practical influence on geodetic observational processing and their geodynamic interpretation; and

Recognising,

1. That the International Earth Rotation Service (IERS), a service jointly affiliated with the IAU and IAG has adopted these IAU resolutions in its calculations and publications, but continues in parallel with the calculations in the previous system; and
2. That adoption of these IAU resolutions by the IERS has been undertaken in a way that makes a smooth transition in geodetic time series, almanac publications, and other services relevant to practical navigation, geodesy, and geodynamics; and
3. That the full operational implementation of these IAU resolutions may require more time than originally proposed in the resolutions;

Endorses,

Resolutions B1.1, B1.2, B1.3, B1.4, B1.5, B1.6, B1.7, B1.8, B1.9 of the 24th General Assembly of the IAU; and

Recommends,

That the IERS continues to provide users with data and algorithms for the conventional transformations, as well as those recommended by the IAU 24th General Assembly, to ensure continuous operation of astronomical and geodetic systems.

Resolution 5: The Impact of Biomass-burning Aerosols on Precipitation

The International Union of Geodesy and Geophysics,

- Considering,* Biomass burning from agricultural practices, household consumption and wildfires produces substantial quantities of aerosol particles that can increase small cloud droplet number concentration; and
- Realizing,* That higher concentrations of small cloud droplets affect their coalescence and the formation of precipitation and thus the water supply; and
- Welcoming,* The recognition of the potential effect of all aerosol sources on precipitation by Congress XIV of the World Meteorological Organization, WMO, in May 2003 and its projected actions focused on biomass burning plumes;
- Urges,* The scientific community to undertake systematic studies of the impact of biomass burning aerosol on precipitation formation on all scales including feedback effects on climate as well as the competing effects of industrial fine particle aerosols and natural coarse particle aerosols such as sea salt and soil dust; and
- Recommends,*
1. That a body be established to undertake an international program of study and assessment of the rain related effects of biomass burning in collaboration with WMO and other international organizations; and
 2. That this body creates a mechanism to assemble the scientific evidence needed to lay the groundwork for a UN sponsored conference on pollution effects on precipitation and hence water supply; and
 3. That this body reports in the IUGG Newsletters and the General Assembly in 2007 on the steps taken and the progress made.

Resolution 6: Data Access under the Comprehensive Nuclear Test Ban Treaty

The International Union of Geodesy and Geophysics,

- Recognising,*
1. That free, open, international exchange of data has been the basis of advances in seismology and related sciences; and
 2. That the International Monitoring System for the Comprehensive Nuclear Test Ban Treaty (CTBT) provides a significant global network of seismic, infrasound and hydroacoustic sensors; and
 3. That article IV Section A.10 of the Comprehensive Nuclear Test Ban Treaty states that “The provision of this Treaty shall not be interpreted as restricting the international exchange for scientific purposes”; and
 4. That the Federation of Digital Seismographic Networks (FDSN) is prepared to accept and disseminate waveform and parametric data to the scientific community;
- Resolves,* That the Preparatory Commission for the CTBT organization be requested to set in place mechanisms for open scientific access to waveform and parametric data from the International Data Centre with minimal delay. In the case of recognized emergencies due to natural catastrophic events, data should be available in near real time.

Resolution 7: Monitoring the Earth with Synthetic Aperture Radar

The International Union of Geodesy and Geophysics,

Recognizing,

1. That we are approaching the 50th anniversary of the International Geophysical Year which was the dawn of international co-operation in exploration of the Earth from space; and
2. The new technology of Synthetic Aperture Radar Interferometry (InSAR) offers a unique view of surface displacements due to earthquakes, volcanoes, ground water withdrawal, ice streams and flood water levels that are indicators of natural and anthropogenic changes of interest to society and science; and
3. That our host country of Japan has shared its InSAR data with all scientists and thus is a role model for other countries; and

Noting with concern,

That this technology has important military uses and commercial applications and is thus prone to restrictions;

Recommends,

1. The open access to all InSAR data; and
2. That space agencies allow unrestricted data sharing among scientists; and
3. The integration of InSAR observations with other geodetic systems; and
4. The co-ordination of InSAR space and ground systems of member countries for optimal scientific utilization of these assets for the benefit of society.

Resolution 8: MST/IS Radar in Antarctica

The International Union of Geodesy and Geophysics,

Considering,

1. That planetary waves, atmospheric tides and gravity waves play a key role in the dynamics of the polar middle atmosphere, including the formation and termination of ozone holes and coupling between the lower and upper atmospheres; and
2. Our limited knowledge of the physics of clouds that occur only in the polar stratosphere and mesosphere and which are important for monitoring natural and anthropogenic effects on climate; and
3. That Mesosphere-Stratosphere-Troposphere / Incoherent Scatter (MST/IS) radars are the only observational tools capable of quantitative studies of the dynamics of the atmosphere from the troposphere to the ionosphere; and
4. That the orographic forcing of waves is different between the hemispheres and that the different separation between the geographic and geomagnetic poles means that the impact of the dynamics of the middle and upper atmospheres will be different between hemispheres; and
5. That substantial solar wind energy enters through the magnetosphere into the polar ionosphere and excites aurora, strong currents, winds and waves through plasma-neutral coupling; and
6. That combined incoherent scatter / MST radar observations at conjugate points in the polar regions provide an unparalleled tool to study these complex processes; and

Noting,

That there are no MST/IS radar systems in the entire Antarctic region, which leaves a major gap in the global radar network;

Recommends,

That MST/IS radars be established at the earliest opportunity in the Antarctic region in order to fill this gap and provide invaluable information to the scientific community.

Resolution 9: Release of Airborne and Marine Magnetic Data

The International Union of Geodesy and Geophysics,

- Considering,* The importance of magnetic anomaly mapping for global geological and tectonic interpretation ; and
- Noting,*
1. The existence of numerous sets of low-level airborne and marine magnetic anomaly data, and the rapid progress made in storing and compiling such data; and
 2. That many data sets remain classified or confidential, even after most have outlived their original purpose; and
 3. That the situation has not significantly improved following IAGA resolution 3 of 1997 ;
- Recommends,* That the custodians of such data sets develop suitable mechanisms to release them into the public domain as soon as possible.

Resolution 10: Inter-operability and Protection of Global Navigation Satellite System signals

The International Union of Geodesy and Geophysics,

- Noting,*
1. The extensive use of the Global Positioning System (GPS) over the past decade, the highly successful integrated receiver and analysis experience in combining GPS and GLONASS observations, and incredible potential of combining multiple Global Navigations Satellite Systems (GNSS), anticipated by the addition of European GNSS Galileo; and
 2. The GPS/GNSS modernization program features three civil signals, and,
 3. The broad user base of the GPS/GNSS system within IUGG and sister organizations as a tool for science, multidisciplinary applications and societal benefits.
- Recognizes,* The need to foster and protect GNSS systems; and
- Recommends,*
1. That GNSS providers are strongly encouraged to cooperate and coordinate closely to ensure inter-operability and compatibility in developing, deploying and operating seamless systems now and in the future and to maximize common frequencies and signals; and
 2. That scientists in IUGG and sister organizations are encouraged to engage in continual activities to protect the signal and spectrum of collective GNSS, to secure long term availability of these satellite signals available from present and future GNSS systems.

Resolution 11: Thanks

The International Union of Geodesy and Geophysics,

Gratefully records its appreciation for the organization, arrangements made, and generous financial support for the XXIII General Assembly. IUGG particularly acknowledges the gracious presence of their majesties the Emperor and the Empress of Japan for their warm welcome and message they extended to all participants and for their informal interaction with delegates from around the world. On behalf of all participants, the Council expresses its warm thanks to the Japanese National Committee for IUGG, to the Science Council of Japan and 16 Japanese geophysical societies, to the Japan Marine Science and Technology Center, to the Local Organizing Committee, to the Program Committee, and to all others involved in making the XXIII General Assembly a success and an enjoyable meeting in Sapporo.

RÉSOLUTIONS DE L'UNION ADOPTÉES Á LA XXIII ASSEMBLÉE GÉNÉRALE DE L'UNION – 9 JUILLET 2003

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Résolution 1: Observatoires géophysiques en fond de mer

L'Union Géodésique et Géophysique Internationale,

Notant

1. que la détermination des variations temporelles du champ de gravité terrestre, en particulier sur les océans, est en cours d'être réalisée par les missions spatiales CHAMP et GRACE ; et
2. que le champ de gravité sur les océans et la pression au fond de ceux-ci sont tous deux sensibles aux modifications de distribution de masses à l'intérieur des océans ; et
3. que le champ magnétique sur les océans, qui est aujourd'hui suivi par plusieurs satellites, subit des variations temporelles liées à l'activité du noyau, à l'induction et à la circulation océanique générale ; et
4. qu'une amélioration significative de la couverture des observations sismiques peut être obtenue par des observations dans les bassins océaniques ; et

Reconnaissant,

1. l'apport de l'assimilation des données dans les modèles océaniques ; et
2. l'importance de valider et d'étalonner les données satellitaires et les modèles d'océans par des mesures in situ ; et
3. le bénéfice d'une couverture accrue d'informations sur les sources sismiques et les structures terrestres ;

Recommande,

1. que des réseaux régionaux et planétaire d'observatoires géophysiques multidisciplinaires de fond de mer soient déployés dans tous les océans ; et
2. que les efforts dans ce domaine soient coordonnés par le Comité International sur les Réseaux Océaniques.

Résolution 2: Modélisation des océans

L'Union Géodésique et Géophysique Internationale,

Notant,

1. la contribution des modèles d'océans aux études présentes, futures ainsi que rétrospectives de l'influence des océans sur la rotation de la Terre, sa déformation, son champ de gravité ; et la position du géocentre ; et
2. l'importance d'avoir des modèles d'océans conservant la masse et incluant le forçage par la pression atmosphérique de surface ; et

Reconnaissant,

1. l'importance considérable des investissements nécessaires pour développer, maintenir et faire fonctionner les modèles d'océans utilisés dans ces études ; et
2. l'apport de l'assimilation de données dans les modèles d'océans ;

Recommande,

la poursuite du soutien à ces activités de modélisation, y compris le développement de modèles prédictifs d'océans conservant la masse et prenant en compte le forçage par la pression en surface ; et

Encourage,

la poursuite des collaborations entre les équipes de géodésiens et de modélisateurs des océans.

Résolution 3 : Système d'observation géodésique intégré et global (IGGOS)

L'Union Géodésique et Géophysique Internationale,

Reconnaissant,

1. les grands progrès accomplis depuis plusieurs décennies dans l'utilisation des techniques spatiales et terrestres pour le suivi de phénomènes et processus dans le système Terre ; et
2. les efforts entrepris pour intégrer les techniques spatiales dans la gestion des observations, leur traitement et leur évaluation, ainsi que pour la modélisation des paramètres observables, et ceci particulièrement par les différents services internationaux ; et
3. le besoin urgent de développer et de renforcer à un niveau supérieur la coopération scientifique ainsi que l'articulation de la géodésie avec l'ensemble des géosciences ; et
4. la nécessité d'élaborer et de rendre accessibles des produits géodésiques essentiels pour les utilisateurs en sciences de la Terre, dans les disciplines voisines et pour la société en général ; et

Considérant,

que l'Association Internationale de Géodésie (AIG) a pris l'initiative de commencer à mettre en œuvre la résolution N° 1 adoptée lors de la 22^{ème} Assemblée Générale tenue à Birmingham en 1999, en décidant la création du Système d'Observation Géodésique Intégré et Global (IGGOS) ;

Soutient fortement,

L'instauration du projet IGGOS au sein des nouvelles structures de l'AIG en tant que contribution de la géodésie au vaste domaine des géosciences, et en tant que base métrologique des programmes d'observation de la Terre impliquant l'UGGI et les organisations internationales citées dans la résolution N° 1 de 1999 ; et

Presse,

les autres associations de coopérer à ce nouveau projet en fournissant les données, modèles, produits et connaissances utiles à IGGOS et pour le bénéfice des géosciences ; et participant à IGGOS en rejoignant les éléments de sa structure relevant de leur domaine et en contribuant aux réunions et symposia du projet.

Résolution 4: Adoption des résolutions B1.1 à B1.9 de l'UAI adoptées à leur 24ème Assemblée Générale, 2000

L'Union Géodésique et Géophysique Internationale,

Notant,

1. que l'Union Astronomique Internationale (UAI), lors de sa 24^{ème} Assemblée Générale tenue à Manchester (Royaume Uni) en août 2000, a adopté les résolutions (annexées ci-après) concernant la définition du système de référence céleste, des échelles de temps et de la précession et de la nutation de la Terre ; et
2. que le système de référence céleste et le modèle de précession-nutation ont une influence pratique sur le traitement des observations géodésiques et leur interprétation géodynamique ; et

Reconnaissant,

1. que le Service International de Rotation de la Terre (IERS), service affilié conjointement à l'UAI et à l'UGGI, a adopté ces résolutions de l'UAI pour ses calculs et publications de produits, mais qu'il continue en parallèle à effectuer ses calculs dans l'ancien système ; et
2. que l'adoption de ces résolutions de l'UAI par l'IERS s'est faite en assurant une transition douce (continuité) dans les séries temporelles géodésiques, publications d'almanachs, et autres produits nécessaires à la navigation, à la géodésie et à la géodynamique ; et
3. que la prise en compte complète et opérationnelle de ces résolutions de l'UAI pourrait prendre plus de temps qu'initialement prévu dans ces résolutions ;

Adopte,

les résolutions B1.1, B1.2, B1.3, B1.4, B1.5, B1.6, B1.7, B1.8, B1.9 de la 24^{ème} Assemblée Générale de l'UAI ; et

Recommande,

que l'IERS continue à fournir aux utilisateurs les données et algorithmes relatifs aux transformations conventionnelles, ainsi que ceux recommandés par la 24^{ème} Assemblée Générale de l'UAI, afin d'assurer la continuité opérationnelle des systèmes astronomiques et géodésiques.

Résolution 5: Effets sur les précipitations des aérosols produits par la combustion de la biomasse

L'Union Géodésique et Géophysique Internationale,

- Considérant,* que la combustion de la biomasse liée à des pratiques agricoles, à la consommation domestique et aux feux de forêts, produit des quantités substantielles de particules d'aérosols qui peuvent accroître la concentration de gouttelettes dans les nuages ; et
- Sachant,* que des concentrations plus élevées de gouttelettes dans les nuages affectent leur coalescence et la formation de précipitations, et affectent donc les ressources en eau ; et
- Saluant,* la reconnaissance des effets potentiels sur les précipitations de toutes les sources d'aérosols par le 14^{ème} Congrès de l'Organisation Météorologique Mondiale (OMM) et les projets d'actions concernant les panaches liés aux combustions de biomasse ;
- Presse,* la communauté scientifique d'entreprendre des études systématiques sur les impact des aérosols issus des combustions de biomasse sur la formation des précipitations à toutes échelles, en incluant les effets rétroactifs sur le climat ainsi que les effets parallèles des fines particules d'aérosols d'origine industrielle et des grosses particules naturelles – telles que le sel de mer et la poussière des sols ; et
- Recommande,*
1. qu'une entité soit créée pour entreprendre un programme international d'étude et d'évaluation des effets de la combustion de biomasse sur les précipitations, en collaboration avec l'OMM et d'autres organisations internationales ; et
 2. que cette entité mette en place un processus de recueil de toutes les preuves scientifiques nécessaires à la tenue d'une conférence convoquée par les Nations Unies sur les effets de la pollution sur les précipitations et donc sur les ressources en eau ; et
 3. que cette entité rapporte sur les actions entreprises et leur évolution dans la Lettre d'information de l'UGGI et lors de l'Assemblée Générale en 2007.

Résolution 6: Accès aux données dans le cadre du Traité d'interdiction des essais nucléaires

L'Union Géodésique et Géophysique Internationale,

- Reconnaissant,*
1. que l'échange libre, non restreint, des données au niveau international a été à la base des progrès en sismologie et dans les sciences voisines ; et
 2. que le système international de surveillance du Traité d'interdiction des essais nucléaires (CTBT) comprend un réseau global important de capteurs sismiques, infrasoniques et hydro-acoustiques ; et
 3. que l'article IV Section A.10 du Traité d'interdiction des essais nucléaires indique que "l'établissement de ce traité ne sera pas interprété comme restreignant les échanges internationaux pour des objectifs scientifiques" ; et
 4. que la Fédération des réseaux de sismographes digitaux est prête à accepter la distribution à la communauté scientifique des données paramétriques et de forme d'onde ;
- Recommande,* que la Commission préparatoire à l'organisation pour le Traité d'interdiction des essais nucléaires (CTBTO) soit saisie afin de mettre en place des mécanismes permettant l'accès ouvert et rapide, à partir du Centre international de données, aux données paramétriques et de forme d'onde à des fins scientifiques. Dans les cas d'urgence reconnue du fait d'événements naturels catastrophiques, les données devraient être disponibles en temps quasi réel.

Résolution 7: Le suivi de la Terre par la technique du radar à ouverture synthétique

L'Union Géodésique et Géophysique Internationale,

Reconnaissant,

1. que nous approchons du 50^{ème} anniversaire de l'Année Géophysique Internationale qui fut l'aube de la coopération internationale dans l'exploration de la Terre depuis l'espace ; et
2. que la technologie nouvelle d'interférométrie par radar à ouverture synthétique (InSAR) offre de manière unique la vision des déplacements en surface liés aux séismes, volcans, prélèvements d'eaux souterraines, écoulement des glaces et niveau des fleuves, qui sont des indicateurs de modifications naturelles et anthropiques de grand intérêt scientifique et sociétal ; et
3. que notre pays hôte, le Japon, a partagé ses données InSAR avec tous les scientifiques, devenant un modèle pour les autres pays ; et

Notant avec inquiétude,

que cette technologie a des utilisations militaires et des applications commerciales importantes, la rendant donc sujette à restrictions ;

Recommande,

1. l'accès libre à toutes les données InSAR ; et
2. que les agences spatiales permettent l'échange de ces données entre les scientifiques sans aucune restriction ; et
3. l'intégration des observations InSAR aux autres systèmes géodésiques ; et
4. la coordination des systèmes INSAR spatiaux et terrestres des pays membres pour l'utilisation scientifique optimale de ces systèmes au bénéfice de la société.

Résolution 8: Radar Mésosphère/Stratosphère/Troposphère à diffusion incohérente en Antarctique

L'Union Géodésique et Géophysique Internationale,

Considérant,

1. que les ondes planétaires, les marées atmosphériques et les ondes de gravité jouent un rôle fondamental dans la dynamique de l'atmosphère moyenne polaire, y compris dans la formation et la terminaison des trous d'ozone et dans le couplage entre la basse et la haute atmosphère ; et
2. notre connaissance limitée de la physique des nuages de la stratosphère et de la mésosphère polaires qui sont importants pour le suivi des effets naturels et anthropiques sur le climat ; et
3. que les radars Mésosphère/Stratosphère/Troposphère à diffusion incohérente (radars MST/IS) sont les seuls moyens d'observation capables de contribuer aux études quantitatives de la dynamique de l'atmosphère, depuis la troposphère jusqu'à l'ionosphère ; et
4. que le forçage orographique des ondes diffère d'un hémisphère à l'autre, et que l'écart entre les pôles géographique et magnétique entraîne une différence de la dynamique des atmosphères moyenne et haute entre les deux hémisphères ; et
5. qu'une quantité notable de l'énergie du vent solaire entre dans l'ionosphère polaire via la magnétosphère et excite les aurores, les courants forts, les vents et les ondes via le couplage plasma-gaz neutres ; et
6. que des observations radar MST/IS en des points conjugués des régions polaires constituent un moyen incomparable d'étudier ces processus complexes ; et

Notant,

qu'il n'y a pas de système radar MST/IS dans tout l'Antarctique, d'où un trou majeur dans le réseau radar planétaire ;

Recommande,

que des radars MST/IS soient installés dans l'Antarctique dès que possible afin de combler ce trou dans le réseau et de fournir à la communauté scientifique des informations irremplaçables.

Résolution 9 : Accès aux données magnétiques marines et aéroportées

L'Union Géodésique et Géophysique Internationale,

Considérant,

l'importance de la cartographie des anomalies magnétiques pour l'interprétation globale de la géologie et de la tectonique ; et

Notant,

1. l'existence d'un grand nombre de lots de données marines et aéroportées d'anomalies magnétiques de bas niveau (originales ou peu pré-traitées), et les progrès rapides dans l'archivage et la compilation de ces données ; et
2. que nombre de ces lots restent classifiés ou confidentiels, même bien au-delà de la durée de propriété associée à leur objectif original ; et
3. que la situation ne s'est guère améliorée depuis la résolution 3 adoptée par l'AIGA en 1997 ;

Recommande,

aux détenteurs de telles données de mettre en place les mécanismes adéquats permettant leur mise dans le domaine public le plus tôt possible.

Résolution 10: Inter-opérabilité et protection des signaux des Systèmes globaux de navigation par satellites

L'Union Géodésique et Géophysique Internationale,

Notant,

1. l'utilisation étendue du Système Global de Positionnement (GPS) au cours de la dernière décennie, the highly successful integrated receiver and analysis rperience in combining GPS and GLONASS observations, et le potentiel extraordinaire de la combinaison de plusieurs Systèmes globaux de navigation par satellites (GNSS), préfigurée par l'addition du GNSS Européen "Galileo" ; et
2. That the GPS/GNSS moderization program features three civil signals, and
3. la large communauté d'utilisateurs des systèmes GPS/GNSS dans l'UGGI et les organisations proches, en tant qu'outil au service de la science, d'applications multi-disciplinaires et de la société en général ;

Reconnaissant,

le besoin de soutenir et de protéger les systèmes GNSS ; et

Recommande,

1. d'encourager fortement les fournisseurs des systèmes GNSS à coopérer et à se coordonner afin d'assurer l'inter-opérabilité et la compatibilité dans le développement, le déploiement et la mise en exploitation de tels systèmes SEAMLESS, aujourd'hui et à l'avenir, et d'avoir un maximum de fréquences et de signaux en commun ; et
2. que les scientifiques de l'UGGI et des organisations proches se mobilisent sans répit pour protéger les signaux et fréquences de l'ensemble des GNSS, afin d'assurer la disponibilité à long terme de ces signaux satellitaires available from present and future GNSS systems.

Résolution 11: Remerciements

L'Union Géodésique et Géophysique Internationale,

Exprime sa reconnaissance pour l'organisation et la préparation de la 23ème Assemblée Générale et pour le généreux soutien financier dont a bénéficié cet événement. L' UGGI tient particulièrement à exprimer sa gratitude à Leurs Majestés l'Empereur et l'Impératrice du Japon pour leur gracieuse présence, pour leur accueil chaleureux et le message qu'Elles ont adressé aux participants, ainsi que pour leur rencontre informelle avec des délégués de nombreux pays. Au nom de tous les participants, le Conseil remercie vivement le Comité National Japonais pour l'UGGI, le Conseil de la Science du Japon ainsi que les seize sociétés japonaises de géophysique, le Centre Japonais pour la Science et la Technologie Marines, le Comité Local d'Organisation, le Comité des Programmes et tous ceux qui se sont impliqués pour faire de cette 23ème Assemblée Générale un succès et une réunion très agréable à Sapporo.

**RESOLUTIONS ADOPTED AT THE XXIII GENERAL ASSEMBLY
BY THE IUGG ASSOCIATIONS
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

THE INTERNATIONAL ASSOCIATION OF GEOMAGNETISM & AERONOMY

Resolution 1

Cooperation and Sharing in Polar Geospace Research (*Divisions II, III, and V*)

IAGA,

noting

- the achievements of the previous International Polar and Geophysical Years,
- that the polar regions are ideal for remote sensing of the geospace environment,
- that ICSU has endorsed a new International Polar Year programme,

recognizing that

- global studies of geospace require extensive networks of instruments in both hemispheres to address key science problems as included in the SCAR ICESTAR initiative,
- the northern hemisphere is well instrumented for geospace research, extensions are planned to the international SuperDARN HF radar network, new technology is now available,
- there will be excellent conjunctions between Antarctica and several satellites (e.g., THEMIS, POLAR, and IMAGE),

recommends

- all agencies working in Antarctica coordinate measurements of magnetospheric and ionospheric electrodynamics through the expansion and integration of instrument networks, especially those including autonomous instruments such as the Antarctic International Magnetometer NETWORK (AIMNET), and
- all countries cooperate to provide ready and free access to hardware, software, and all data to maximize the value and success of international collaboration.

Resolution 2

‘International Year’ and eGY Initiatives (*Division III*)

IAGA,

noting that

- the achievements of the IGY in 1957 launched a dramatic advance in geospace science and understanding,
- several “International Year” concepts are under discussion, including the International Heliophysical Year (IHY) and the International Year of Planet Earth (IYPE),
- the cutting edge science in IAGA depends on coordinated data characterizing the global solar and terrestrial systems,

recognizing

that it is central to IAGA’s charter to promote international science by encouraging world-wide open access to real-time data, existing data bases, and digitized versions of analogue data,

endorses

the intent of CAWSES (Climate and Weather of the Sun-Earth System) and “International Year” activities, and

urges that

- such activities be coordinated to maximize their collective effectiveness under an overarching umbrella concept, and
- data archival activities be emphasized under an “electronic Geophysical Year” (eGY) initiative and maintained thereafter to promote world-wide electronic access to data.

Resolution 3

Radiation Belt Research and Society (*Division III*)

IAGA,

recognizing that

- we are approaching the 50th anniversary of the discovery of the Van Allen radiation belts,
- the radiation belts continue to represent a major space weather hazard to humans and human technology in near-Earth Space,
- many scientific questions remain about how radiation belt particles are accelerated and ultimately are lost,
- several nations and agencies have spacecraft operating in Earth-orbit that can measure radiation belt properties,

urges

funding agencies of the world to continue to support investigation of physical processes, and the collection, analysis, and preservation of related data obtained via spacecraft in order to assure that models and forecasting tools continue to meet the demands of society.

Resolution 4

Magnetic Repeat Station Surveys: Cooperation and Standardization (*Division V*)

IAGA,

recognizing

the importance of data from magnetic repeat stations for modeling the geomagnetic field,

noting

the success of the European initiative for standardizing networks of repeat stations and achieving uniform station density and common repetition intervals,

encourages

countries in all regions to undertake magnetic repeat station surveys and to cooperate with neighboring countries in order to develop regional and international standardization.

Resolution 5

Provision of Data for Geomagnetic Indices (*Divisions III and V*)

IAGA,

recognizing

the increasing importance of providing “quick-look”, provisional, and definitive IAGA geomagnetic indices to the worldwide scientific community,

appreciating

the efforts of the contributing network of geomagnetic observatories and their funding agencies in supporting this activity,

noting

that some geomagnetic observatories have difficulties in routinely providing timely data to the institutions that derive these indices,

urges

contributing observatories and their funding agencies to continue producing high-quality and timely data on a routine basis.

Resolution 6

International Decade of Potential-Field Research (*Division V*)

IAGA,

considering

IAGA Resolution No.1 passed in 1997 concerning the declaration of the International Decade of Geopotential-Field Research, and IUGG Resolution No.1 passed in 1999 concerning Integrated Global Earth Monitoring Systems,

thanks

the bodies involved in launching and operating magnetic survey satellites (including Ørsted, CHAMP, SAC-C, and FEDSAT) and distributing their data to the worldwide scientific community, and

strongly encourages

all institutions and funding organizations to continue this work in order to achieve a better understanding of the Earth’s dynamical core, mantle, crust, ionosphere, and magnetosphere.

Resolution 7

Geomagnetic Observations in Greenland (*Division V*)

IAGA,

considering

the importance of geomagnetic field monitoring in polar regions for modeling the internal sources as well as for studies of solar-terrestrial physics and related space weather phenomena,

noting

the high value of long-running, high-quality geomagnetic observations in Greenland,

acknowledges

the outstanding long-term efforts by the Danish Meteorological Institute, and

encourages

that every effort be made to ensure that high-quality geomagnetic observations are maintained in Greenland in the future.

Resolution 8

Involvement of Developing Countries in Equatorial and Low-latitude Research (*IDC DC*)

IAGA,

considering

the importance of atmospheric and ionospheric processes at equatorial and low latitudes in the context of global studies of Sun-Earth relationships, and

recognizing

that new observational facilities have become operational in many developing countries,

recommends

that research using these facilities and ground-based, ocean-based, and space-based instruments be carried out in close collaboration with scientists in the developing countries so as to promote their participation and technology transfer.

Resolution 9

Ionosphere Observations (*Division II*)

IAGA,

considering

the importance of determining long-term trends in the ionosphere in order to reveal the impact of anthropogenic influences (mainly the greenhouse effect) on the upper atmosphere as a tool for early detection of global change in the Earth system,

recognizing

the primary role of long-term ionospheric measurements by the global ionosonde network (since the 1950s) for long-term trend determination,

emphasizes

the importance of maintaining measurements by the global network of ionosondes, and

urges

bodies running ground-based ionosonde measurements to continue conducting measurements on the internationally agreed regular basis and make the results available for international data exchange and to the system of World Data Centers.

THE INTERNATIONAL ASSOCIATION OF METEOROLOGY & ATMOSPHERIC SCIENCES

Resolution 1

IAMAS,

Considering

Biomass burning from agricultural practices, household consumption and wildfires produces substantial quantities of aerosol particles that can increase small cloud droplet number concentration.

Realizing

that higher concentrations of small cloud droplets affect their coalescence and the formation of precipitation and thus the water supply.

Welcoming

the recognition of the potential effect of all aerosol sources on precipitation by Congress XIV of the World Meteorological Organization, WMO, in May 2003 and its projected actions focused on biomass burning plumes.

Urges

the scientific community to undertake systematic studies of the impact of biomass burning aerosol on precipitation formation on all scales. Feedback effects on climate as well as the competing effects of industrial fine particle aerosols and natural coarse particle aerosols such as sea salt and soil dust should be included.

Recommends

- that a body be established to undertake an international program of study and assessment of the rain related effects of biomass burning in collaboration with WMO and other international organizations.
- that this body creates a mechanism to assemble the scientific evidence needed to lay the groundwork for a UN sponsored conference on pollution effects on precipitation and hence water supply.
- that this body reports in the IUGG Newsletters and the GA in 2007 on the step taken and the progress made.

THE INTERNATIONAL ASSOCIATION OF SEISMOLOGY & PHYSICS OF THE EARTH'S INTERIOR

Resolution 1

IASPEI,

Recognizing

the increased detection capabilities of modern seismic networks and the new Earth models,

Adopts

the new list of standard seismic phase names approved by the Commission on Seismological Observation and Interpretation,

Recommends

that all scientists, seismic observatories and the seismological community adopt and use the new standard seismic phase names.

Resolution 2

IASPEI,

Recognizing

the decision of the Preparatory Commission of the CTBT to share data from the Reviewed Event Bulletin (REB) with the International Seismological Centre (ISC).

Notes

the utility of these data in improving the completeness of the global summary of earthquakes in the ISC Bulletin, especially in otherwise poorly monitored regions, and in providing quality control on other bulletins,

Encourages

the Preparatory Commission for the CTBT to continue and expedite the release of REB data and authorize the release of the accompanying waveform data.

Resolution 3

IASPEI,

Recognizing

the need to accurately locate earthquakes and determine earthquake size, and compile complete earthquake bulletins,

Urges

all operators of seismic stations and networks to deposit unique station codes with the international registry maintained by the International Seismological Centre and by the World Data Centre for Seismology, Denver, and to freely share the coordinates of all seismic stations, and

Urges

all operators of seismic stations and networks to keep accurate record of instrument response and performance.

Resolution 4

IASPEI,

Appreciation

Recognizing the effort required to organize the General Assembly, IASPEI thanks and congratulates the members of the Local Organizing Committee for a successful and most memorable meeting.

XXIII IUGG GENERAL ASSEMBLY CLOSING CEREMONY GREETINGS BY DR. M. KONO, PRESIDENT of IUGG 1999-2003 23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Welcome to the Closing Ceremony of the 23rd General Assembly of the International Union of Geodesy and Geophysics. It is our purpose here today to summarize the many activities of the past two weeks, and to offer thanks for the hard work of the Local Organizing Committee, the Scientific Programme Committee, the IUGG Council, the Associations, and the many participants who have traveled from long distances to join in the Assembly. We will also award the prizes of the Outreach Programme to High Schools who participated in the contests and congratulate them on their achievements.

First, I wish to introduce the members of the IUGG Bureau, the Finance Committee, and the Association Presidents and Secretaries General who have served faithfully for the past four years. As many as could attend today are seated here before you. I will read all of their names in recognition of their service.

Dr. Peter Wyllie IUGG President 1995-1999
Dr. Uri Shamir IUGG Vice President 1995-2003
Dr. Jo Ann Joselyn IUGG Secretary General 1999-2003
Dr. Aksel Hansen IUGG Treasurer 1999-2003
Dr. J-Y. Chen IUGG Bureau Member 1995-2003
Dr. Harsh Gupta IUGG Bureau Member 1999-2003
Dr. Tom Beer IUGG Bureau Member 2001-2003

IUGG Finance Committee
Dr. Fred Spilhaus, President 1999-2003,
Secretary 1995-1999, and Member 1987-2003

Dr. Patrick Pinet, Secretary 1999-2003
Dr. V.K. Gaur, 1995-2003
Dr. Erwin Groten, 1995-2003
Dr. Michael Hamlin, 1991-2003

For the International Association of Geodesy (IAG):
Dr. F. Sanso, President, and Dr. CC.
Tscherning, Secretary General;

For the International Association of Geomagnetism and Aeronomy (IAGA): Dr. D.J. Kerridge, President, and Dr. Bengt Hultqvist, Secretary General;

For the International Association of Hydrological Sciences (IAHS): Dr. K Takeuchi, President, and Dr. Pierre Hubert, Secretary General;

For the International Association of Meteorology and Atmospheric Sciences (IAMAS): Dr. Huw Davies, President, and Dr. Roland List, Secretary General;

For the International Association for the Physical Sciences of the Oceans (IAPSO): Dr. Paola

Rizzoli, President, and Dr. Fred Camfield, Secretary General;

For the International Association of Seismology and Physics of the Earth's Interior (IASPEI): Dr. Brian Kennett, President, and Dr. E. Robert Engdahl, Secretary General;

for the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI): Dr. R.S.J. Sparks, President, and Dr. Steve McNutt, Secretary General.

In Remembrance

In the four years since the 1999 IUGG General Assembly held in Birmingham, U.K., a number of our IUGG officers have died. Here we present a list of those that are known to us. Please rise and join me in a moment of silence as we remember them.

International Association of Geodesy :

Dr. Peter Vincent Angus-Leppan (Australia)
Dr. S. Bakkelid (Norway)
Chief Dr. Rowland Oluwole Coker (Nigeria)
Dr. Tetar Kresimir Colic (Croatia)
Dr. Joseph F. Dracup (USA)
Dr. R.C.A. Edge (United Kingdom)
Dr. Lars A. Haller (Sweden)
Dr. Francis J. Lerch (USA)
Dr. Jean-Jacques Levallois (France)
Prof. Raphael Movsessian (Armenia)
Dr. Alwyn R. Robbins (United Kingdom)
Dr. Thaddeus Vincenty (USA)
Dr. Hans-George Wenzel (Germany)

International Association of Geomagnetism and Aeronomy :

Dr. Lars Block (Sweden)
Dr. Michael Buonsanto (USA)
Dr. Ivan Cupal (Czech Republic)
Dr. A. El-Sayed (Egypt)
Prof. Naoshi Fukushima (Japan)
Prof. M. Gadsden (Scotland)
Prof. Ruth Gall (Mexico)
Dr. A.W. Green, Jr. (USA)
Dr. Motokazu Hirono (Japan)
Dr. Andrei Konradi (USA)
Prof. Sam Ogunade (Nigeria)
Dr. W.D. Parkinson (Australia)
Prof. Phil Williams (United Kingdom)
Dr. Yonesawa (Japan)

International Association of Hydrological Sciences :

Dr J.P. Carbonnel (France)

International Association of Meteorology and Atmospheric Sciences :

Dr. W. Godson (Canada)

International Association of Physical Sciences of the Ocean :

Dr. Eugene LaFond (USA)
Dr. Robert E. Stevenson (USA)

International Association of Seismology and Physics of the Earths Interior :

Prof. Toshi Asada (Japan)
Prof. Markus Båth (Sweden)
Dr. Hikaru Watanabe (Japan)
Dr. A.W. Brian Jacob (Ireland)

International Association of Volcanology and Chemistry of the Earths Interior :

Dr. Bruno Martinelli (Switzerland)
Mr. Diego Viracuchka (Ecuador)
Prof. Richard Fisher (USA)
Prof. Mario Mazzoni (Argentina)
Mr. Miktu (Indonesia)
Prof. Richard Stoiber (USA)
Mr. Wilden (Indonesia)

Outreach Programme

Special mention should be made about the organization of the extensive Outreach Programme prepared by the LOC. More than forty occasions were included in the programme, which included lectures to the public and to secondary and high schools, competition between students, etc. In terms of the increased need of the close contact of our sciences to the society, these efforts for a extensive outreach should be highly commended. Now I would like to present the winners of the competition between the participating high schools. The first prize goes to Sapporo Moiwa High School, and the second prizes are shared by Satsumae-Kita Junior High School and Kotoniwa Technical High School.

Now I would like to summarize the activities of the IUGG in the last four years that culminated in this Assembly. In this interval, the IUGG, with a strong help and support from the Associations, tried to reform some of its mode of operations to better support the geophysicists community and to meet the needs of the changing world. One big item was to make the General Assembly more cross cutting and interdisciplinary, and for that purpose, this Assembly chose a theme "State of the Planet: Frontiers and Challenges" and Union Lectures as well as the Union Symposia were organized to fit the theme. Steve Sparks and other Association leaders made a great effort to materialize these. Another aspect is that the IUGG expanded the mode of communication by creating the monthly IUGG Newsletter. Together with the renovated homepage, it makes the communication with the National Committees and scientists community much more effective. JoAnn Joselyn and the Secretariat worked very hard to establish this. These results are just some of the earlier products of the reforms that IUGG is continuously making in a long interval. With the election of very strong executives for the Union and Associations for the new quadrennium, I have no doubt that this effort continues in the coming years.

I would like now to acknowledge the extraordinary precautions that were made necessary by the outbreak of Sudden Acute Respiratory Syndrome (SARS) in regions of several countries worldwide. IUGG greatly appreciates the efforts by the participants at this General Assembly to overcome the difficulties that resulted. We understand the problems to finalize travel arrangements meant that some had to cancel their plans to attend this General Assembly. We sincerely thank those scientists from SARS-affected areas for their understanding and willingness to co-operate with the LOC. Your spirit of cooperation contributed significantly to the success of this General Assembly.

REPORT OF THE IUGG SECRETARY GENERAL
DR. J.A. JOSELYN
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

At this Closing Ceremony, it is my honor and duty to report the general business of the IUGG Council and the Executive Committee to the General Assembly. The IUGG Council met in 3 separate sessions and took the following actions.

Regarding Membership, the Council approved the admission or re-admission of Albania, Armenia, Bosnia and Hercegovina, Colombia, Mauritius, and Peru. The Council approved the transfer of Morocco, Nigeria, Pakistan, and Serbia and Montenegro to Associate status, and approved a decrease in category for France and Indonesia. There are now a total of 64 National Bodies that adhere to IUGG.

The liaisons to various ICSU, inter-governmental, and inter Union bodies were approved, as well as the budget for 2003-2007 which estimates an income and expenditure over the next 4 years of \$1.5 Million (USD).

In the meetings, discussion of proposed changes to Statutes and By-Laws took much time. But in the end two modified proposals were adopted. The first one opens the Council Meetings to persons who wish to listen. The second proposal addressed the role of the IUGG Finance Committee, streamlining their work and reducing their size in 2007.

The Council discussed the role of the Council both at the General Assemblies and between the General Assemblies, and resolved to take a more active and visible role. They also elected the officers of the Union for the next Quadrennium and the place of the 2007 General Assembly. Those announcements will come later in this programme. The Resolutions of the Council will also be read later.

The IUGG Executive Committee met 3 times and took several actions during these 2 weeks. These included financial allocations to several inter-Association and inter-Union bodies; support for an inter-Association study of the impacts on precipitation of Bio-Mass burning; consideration of a new inter-Associations Commission on Snow and Ice; adoption of an active program to coordinate and plan initiatives to mark the 50th Anniversary of the International Geophysical Year in 2007; and full partnership with International Union of Geological Sciences (IUGS) on an initiative *planetearth* that includes a request to the United Nations to declare an International Year of Planet Earth. IUGG will help to choose and develop the scientific projects that will an important part of this initiative.

Finally, I wish to add my thanks to Local Organizing Committee and to the personnel of the Royton Hotel for their warm hospitality and hard work to see that the needs of the Secretariat were fully met. Sapporo has been an extraordinarily welcoming place and we are grateful.

REPORT OF THE IUGG TREASURER
DR. AKSEL W. HANSEN
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Dear Mr. President, ladies and gentlemen, dear colleagues,

I have today the opportunity to give you a brief overview of the financial status of the union. You'll see two transparencies only: one is the approved budget for 2004-07, the other one is an overview for 1996-2007. The budget for 2004-07 was approved by the Council last Friday and is shown here in my first transparency. The overview sheet highlights how the union has evolved or will evolve financially over the three periods covering altogether 12 years.

My full Finance Report is in the Agenda Book for the Council meetings and has been presented to the council. It covers the two periods 1996-99 and 2000-02.

The period 1996-99 can seem a bit far back to go, but it is included here in this analysis because this is the first opportunity to give a final comparison of accounting and budget for a full 4 yr period. At the time of writing this can't be done for the present period 2000-03. I'll here combine data from these two periods with new estimates for 2003 and also data from the approved budget for 2004-07.

Here follows an extract of the presented overview.

Overview of IUGG's financial status 1996-2007

	1996-99	2000-03	2004-07
Value of 1 unit (+2%/yr) in each period	1245-1320	1340-1455	1484-1575
Balance 1/1 in first year in the period	244,3	439,1	480,7
Income (98% from member dues)	1.603,5	1.587,1	1.531,4
Expenditures	1.408,7	1.545,3	1.592,5
Administrative	276,4	280,0	340,0
dues to ICSU	47,8	53,5	64,0
Associations	712,6	780,0	737,5
Grants	266,7	400,9	431,0
Balance 31/12 in the last year of a period	439,1	480,7	419,6
Result of period	194,8	41,6	-61,1

We see a tendency to decreasing income from members, because many members do not pay their dues and eventually they drop out. In 1999 IUGG had 75 members and 290 paid units, during the next period these numbers are expected to be 67 members and 245 units. With increasing administrative expenses and also an increasing level of grant allocations IUGG must foresee a negative result for the period 2004-07. The budget balance is reduced to 419,6 k\$ by the end of the period. The annually adjustment of the value of 1 unit is important in this context.

In general, IUGG has a sound economy, we do not owe money to anybody, we pay the bills in time and we have reserves of the order 1 yr expenditures. But, considering the presented negative result for 2004-07 a warning is necessary at this point.

The Council at the General Assembly approved a budget that cuts deep into the reserves, but fortunately not yet in the bones. This is acceptable as long as it is done only once. Therefore, in parallel with the ongoing process of renewing its structure and functioning, it is mandatory that the union also establishes a long-term strategy to secure the funding of the anticipated activities in the future.

Thank you
Aksel Walloe Hansen

Approved budget for 2004 – 2007

Please refer to the Minutes of the Second Council Meeting for details on the approved budget for 2004 – 2007.

READING OF THE RESOLUTIONS OF THE UNION ADOPTED AT THE XXIII GENERAL ASSEMBLY

The Resolutions adopted by the IUGG Council constitute the most serious and enduring business of the General Assembly. These Resolutions present the findings of the Union to our Adhering Bodies and to the scientific community as a whole, and recommend actions. The Resolutions of the Union and also of the

Associations that adopted resolutions are printed in these *Comptes Rendus*. At the Closing Ceremony, each Resolution was read in English by either Jo Ann Joselyn or Tom Beer, and they were shown on overhead projection in both English and French.

FINAL REMARKS BY DR. MASARU KONO
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Once again, on behalf of all of the participants at this 23rd IUGG General Assembly, I wish to thank all the people whose efforts were essential in making this General Assembly such a success. The Scientific Programme Committee devoted a lot of time in making the attractive programme. The Local Organizing Committee made a tremendous effort in preparing good lecture halls, accommodation, and logistic support for the scientific sessions. They also offered a big sum of money to support the travel of the scientists from the countries in need. The first IUGG General Assembly to come to Asia has been an extraordinary success to be warmly remembered by the 4000+ scientists and their family members who have come to Sapporo, many for the first time. Sincere Congratulations on your achievement.

I will now introduce the new members of the IUGG Bureau and Finance Committee and the officers of the Associations for the 2003-2007 quadrennium.

Dr. Uri Shamir	IUGG President
Dr. Tom Beer	IUGG Vice President
Dr. Jo Ann Joselyn	IUGG Secretary General
Dr. Aksel Hansen	IUGG Treasurer
Dr. Y-T. Chen	IUGG Bureau Member
Dr. Harsh Gupta	IUGG Bureau Member
Dr. A.A. Tealeb	IUGG Bureau Member

IUGG Finance Committee	
Dr. Michael Hamlin	President

Dr. David Jackson
Dr. Brian Kennett
Dr. Kiyoshi Suyehiro
Dr. Juan Francisco Vilas

For the International Association of Geodesy (IAG):
Dr. G. Beutler, President, and Dr. CC.
Tscherning, Secretary General;

For the International Association of Geomagnetism and Aeronomy (IAGA): Dr. C Barton, President, and Dr. B. Hultqvist, Secretary General;

For the International Association of Hydrological Sciences (IAHS): Dr. K Takeuchi, President, and Dr. Pierre Hubert, Secretary General;

For the International Association of Meteorology and Atmospheric Sciences (IAMAS): Dr. M. MacCracken, President, and Dr. R. List, Secretary General;

For the International Association for the Physical Sciences of the Oceans (IAPSO): Dr. S. Imawaki, President, and Dr. F. Camfield, Secretary General;

For the International Association of Seismology and Physics of the Earth's Interior (IASPEI): Dr. E.R. Engdahl, President, and Dr. P. Suhadolc, Secretary General;

For the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI): Dr. O. Navon, President, and Dr. Steve McNutt, Secretary General.

Congratulations to these new IUGG officers!

I have come to the end of my speech. It was a great pleasure to meet you on this occasion of the 23rd General Assembly of the IUGG. Thank you very much.

Dr. Shamir – please take your place at the podium.

CLOSING REMARKS BY DR. URI SHAMIR
23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Thank you President Kono. In these final few minutes of the General Assembly, there are just three items of business. The first is to recognize your service to IUGG for the past 4 years, and to welcome you to the celebrated position of Past President. We look forward to your continued presence and good advice as a valued member of the 2003-2007 IUGG Executive Committee.

Next, it is my pleasure to present a special award, which is a surprise, to a person who has been a guiding light for IUGG since at least 1971, when he was elected Vice President of IUGG. He was then elected President from 1975-1979, and then was elected to the Finance Committee in 1983 – a position to which he was re-elected 3 more times. During his last term, 1995-1999, he served as the President of the Finance Committee. This person can be no other than Dr. Attia Ashour, a much respected and much loved member of our community. Dr. Ashour, please accept this small gift and the gratitude of IUGG for your 22 years of service.

Finally, I invite the members of the 23rd IUGG General Assembly to come to the 24th General Assembly to be held in 2007 in Perugia, Italy. The dates of this General Assembly, which will mark the 50th anniversary of the International Geophysical Year (1957-58) will be announced as soon as they are finalized. We look forward to meeting you all there.

QUADRENNIAL REPORT OF THE PRESIDENT**DR. MASARU KONO****23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003****Overview**

Since the present Bureau members were elected and took up the offices in Birmingham in August

1999, the primary concern of the Bureau has been how we can make the IUGG better to fit in the present day world. There are of course the day to day to day businesses the IUGG face all the time, which we certainly carried out with all the care needed. At the same time, however, we examined the status of the IUGG in the international science scene and tried to strengthen the IUGG in its structure, ties with the international geophysics community as well as with the intergovernmental and nongovernmental organizations, and enhance the outreach to scientists in the developing countries.

This report summarizes various activities in the IUGG that took place in the last four years. A special effort was made to place these activities in the context of our continuing effort to make IUGG better to meet the needs of the 21st century.

Need for the Change

The IUGG was established in 1919 and has been the only international scientific body covering the discipline of geodesy and geophysics. Through its long history, the IUGG organized international cooperation, encouraged the participation of geophysicists from developing countries in the international scientific scenes, and held the General Assemblies and other meetings to promote the exchange of the new and innovative findings and ideas in the Earth and planetary sciences.

One of the most successful enterprise for which the IUGG played the central role was the International Geophysical Year (IGY) in 1957 and following years, which was the first major scientific cooperation in a truly international scale. The first satellite was launched into the orbit that marks the starting point of the explosive development in space science and planetary exploration. Antarctic expeditions were sent from many countries under international coordination. The continuing researches and observations there brought about decisive evidences in the global climate change; in the long term as deciphered from the ice cores, and in the short run from the discovery of the ozone hole. It can also be said that the plate tectonics revolution was prepared in the IGY efforts, because the ocean explorations in the IGY period provided the most important date to this new theory.

In the following Cold War years, the importance of the IUGG was quite well recognized because the IUGG could provide the venue for the eastern and western scientists to meet together and exchange information related to scientific achievements. This state continued until the time the Soviet-bloc broke down. Since that time, the situation changed completely. The IUGG faces the danger that the internationally recognized authority it had in its discipline is somewhat eroding. There are various reasons for this trend, but we thought that the most important ones are as follows.

- Regional societies are gaining more eminence and influential power in geodesy and geophysics. This is most significant in the cases of North America and Europe with the American Geophysical Union (AGU) and European Geophysical Union (EGU, formerly EGS-EUG).

- The societal and economic changes have resulted in the reprioritization of science budgets in many countries, with a shift toward activities of more interdisciplinary character. Understanding of the mechanism of global change or natural hazards is important, but the funded programs tend to combine the science with technological and societal elements to serve the immediate needs of the society.

- There are now so many intergovernmental and nongovernmental organizations that carry out international programs that the importance of the IUGG as the organizer of science program is challenged. Even the International Council for Science (ICSU) is facing a similar situation, and, as a result, likes to carry out international programs as its own endeavor (like International Geosphere-Biosphere Program, IGBP), without good consultation with the related Unions.

- The revolution in information technology (IT) completely changed the mode of communication in the scientific society. In particular, it is the current trend that individual scientists get more and more direct contact with the societies through emails, home pages, and electronic publication.

These considerations lead the present Bureau to seek the opinions of the National Committees and Associations to consider and enact what changes and reformations are needed for the IUGG.

Discussion in the Bureau and Executive Committee

The discussion about the need for the change of the IUGG structure and *modus operandi* began in the Bureau meeting held in Boulder in August 2000. Prior to the meeting Vere Shannon and Peter Wyllie was asked to form an *ad-hoc* working group and to prepare a document to serve as the basis for discussion. The working group submitted quite detailed suggestions in the form of a 13-page document for the meeting. During the Bureau meeting and the meeting of Bureau and Executive Committee members (i.e., Presidents and Secretaries-General of seven Associations) that followed, substantial amount of time was devoted to intensive discussion of the working document as well as other related proposals and suggestions; (i) IUGG Advisory Board Report, IUGG Chronicle No. 226, p. 89, (ii) comments from Helmut Moritz (1994), Chris Moors (1999), and Christian Tscherning (1999). After this discussion, Bureau and Executive Committee members recognized the impending need for some change in the IUGG. It was decided at this meeting that opinions should be sought from various parts of the IUGG community on this problem.

After Boulder meeting, another working group was formed with Vere Shannon (Chair), JoAnn Joselyn, Harsh Gupta, and myself as members to carry out more searches for the change in the IUGG community. Vere Shannon again took the initiative and the working group prepared the questionnaire that was sent to National Committees and Associations. As Vere Shannon resigned from the Bureau shortly after this, Uri Shamir joined the working group and, together with Harsh Gupta, prepared the summary of the results of questionnaire.

In Sapporo in July and August 2001, the summary of responses to the questionnaire was presented to the Bureau and then to the Executive Committee meetings. Again considerable amount of time was spent to discuss various matters in the questionnaire and responses. The Bureau and the Executive Committee unanimously agreed that there are several problems in the IUGG that need immediate attention or action so that the IUGG can respond to the needs of the science community and the general public in today's environment. In view of the limited time available, it was decided not to aim at drastic and too far-reaching reforms but to pursue changes that can actually be instituted in a few years time. The areas to which we should concentrate our energy were identified as follows.

- General Assemblies should be made more attractive to the geodesists and geophysicists. A more coherent meeting is preferable to the collection of seven Associations meetings held at the same place and time.
- National Committees should be encouraged to take more active part in the IUGG activities. For that purpose, more information should be constantly sent to the National Committees.
- The problems within the scope of the IUGG science increase importance in the human society. A closer collaboration between the Associations and also between the IUGG and other Unions are required to attack them because of their interdisciplinary nature.
- The profile of the IUGG should be made more prominent in the international bodies such as ICSU, UNESCO, and WMO.
- To meet the needs of the present world, the IUGG should form a program for mitigation of natural hazards (this lead to the formation of the GeoRisk Commission). This problem could be one of the programs that the IUGG can propose to the ICSU for larger international program.
- The reform we try to implement now is just a start of a continuing process for the future years of the IUGG. For the continuing effort to be successful, it is necessary to involve the younger generation in this process.

Preparations for General Assembly

Following the suggestion made by Steve Sparks (IAVCEI President), the 23rd General Assembly in Sapporo was assigned the overarching theme **The State of the Planet: Frontiers and Challenges**.

Under this title, a series of six Union Symposia were planned. Other Union activities, including the Union Lectures were also considered to make the Assembly attractive as well as a coherent activity. To involve the young generation in the consideration of the future of the IUGG, a special task group **Geophysics: The Future** was set up under the guidance of Uri Shamir, IUGG Vice-President. The members are seven young scientists (under 35) recommended from the Associations. There will be a Union session in the General Assembly, and Uri anticipates this to be the start of the continuing effort by young generation scientists.

Union Lecturers

The Union Lecturers were selected at the Sapporo EC meeting. A particular emphasis was placed to make the Union Lectures a kind of "keynote speech" for the following Union Symposium. Four distinguished scientists agreed to deliver their lectures to meet this purpose.

Union lecturer	Affiliation	Lecture title	Union symposium
Taro Matsuno	JAMSTEC (Japan)	Atmospheric phenomena and Earth systems modeling	U1
Mario Molina	MIT (USA)	The impact of human activities on the chemistry of the atmosphere	U3
Gary Glatzmaier	UCSC (USA)	Modeling of the Earth's dynamo	U5
Christoph Reiger	GFZ (Germany)	Earth's gravity field determined by new satellites	U6

Nominating Committee

Candidates for the Nominating Committee members were solicited from the Executive Committee members. The following four members were selected as a result, and Klaus-Peter Schwarz was asked to chair the committee. After the names of candidates were submitted from National Committees and Associations, the Nominating Committee selected the slate for the officers of the Union for 2003–2007.

Member	Country	Formerly	Association	Period
Klaus-Peter Schwarz (Chair)	Canada	President	IAG	95 – 99
Michael Kuhn	Austria	SG	IAMAS	87 – 95
Devendra Lal	India	President	IUGG	83 – 87
James O'Brien	USA	President	IAPSO	87 – 91

Resolutions Committee

To treat the resolutions submitted by National Committees or Associations, the Resolution Committee was set up. In the Sapporo Assembly, it is planned to streamline the resolution making process. This means that the Associations need to start to discuss about resolutions before the actual meeting takes place. Resolutions Committee has the responsibility to oversee this process.

Member	Country	Position	Association	Period
Harsh Gupta (Chair)	India	Member	Bureau	99 – 03
Georges Balmino	France	SG	IUGG	95 – 99
Robert Vincent	Australia	VP	IAMAS	99 – 03
Kathy Whaler	UK	SPC Chair for 22 Assembly		96 – 99

Statutes and By-Laws Committee

At the Executive Committee meeting, we decided not to seek big changes in the Statutes and By-Laws ourselves. However, it was pointed out later that there is some confusion about the Associate status in the current wording. Also, it was anticipated that some National Committees might wish to submit proposals to change some part of Statutes or By-Laws. As the wording in these needs special care (not to leave ambiguities for the future), the Statutes and By-Laws Committee was set up to take care of these matters.

Member	Country	Position	Association	Period
Uri Shamir (Chair)	Israel	VP	IUGG	99 – 03
Bob Engdahl	USA	SG	IASPEI	95 – 03
Roland Schlich	France	Treasurer	French NC	99 – 03
Vere Shannon	South Africa	President	IAPSO	95 – 99
Peter Wyllie	USA	President	IUGG	95 – 99

IGY+50 Committee

2007 will be the 50-year anniversary of the International Geophysical Year, a highly successful as well as influential international scientific program aimed at observation of various aspects of the Earth. The ICSU asked the IUGG to make a plan for the commemoration on this occasion. A committee was set up to consider various possibilities for the commemoration. The committee was asked to present a proposal to the Executive Committee at the Sapporo Assembly.

Member	Country	Association
Michael Kuhn (Chair)	Austria	IAMAS
Dan Baker	USA	IAGA
Domenico Giardini	Italy	IASPEI
Ivan Mueller	USA	IAG
Yun-Tai Chen	China	IASPEI
Rajender Chadha	India	IASPEI

Strengthening the Ties with Other International Bodies**Relation with ICSU**

The former IUGG President, Peter Wyllie, reported again and again that the importance of the Earth sciences was not quite well appreciated in ICSU. Peter and Robin Brett (former IUGS President) made a strong effort to change this situation. Thanks to their effort and to some extent by our own too, the situation now seems to be much better.

There were four meetings of the ICSU in this period that we attended- 26th General Assembly in Cairo in September 1999 (Peter Wyllie, Masaru Kono), Unions meeting in Paris in February 2001 (JoAnn Joselyn), 27th General Assembly in Rio de Janeiro in September 2002 (Masaru Kono, JoAnn Joselyn), and an Inter-Union meeting to promote ICSU funded program in February 2003 (JoAnn Joselyn). Each of these provided a good opportunity to discuss matters of common concern among the Unions, and to raise the voice about the ICSU procedure that falls in the domain of the IUGG. The Earth science now has good representative in its administration too. We succeeded to elect Robin Brett to the Board of ICSU for two consecutive periods. Uri Shamir is also involved in the ICSU activity as a member of an important panel.

Relations with IUGS

The International Union of Geological Sciences (IUGS) is one of the closest allies of the IUGG, especially matters related to ICSU and other international organizations. There were several occasions that I met with Ed de Mulder, the current President of IUGS, and discussed matters of common interest to the two Unions. We met in Misasa in January 2001, in Maastricht in July 2001, and in Rio de Janeiro in September 2002. The IUGG also sent David Kerridge (IAGA President) to attend the IUGS Executive Committee meeting held in Namibia in February 2003. The matters discussed between the two Unions include SCL, IGY+50 and INPE, GeoRisk and hazards, and geoinicators.

Scientific Committee on the Lithosphere (SCL) used to be an inter-Union body between the IUGG and IUGS. Because of the ICSU decision, they now have permanent status in the ICSU structure.

There are some overlaps in the activities of three bodies that need some coordination (such as hazards).

As the IGY+50 for which the IUGG is now making preparations, the IUGS is going to propose the United Nations to have 2005 (to 2012) declared as the International Year of Planet Earth. The IUGG agreed to support their initiative, and we discussed the possible ways to connect some part of the IGY+50 activity with them (still under discussion). Geoinicators is another of recent IUGS proposal, but we have to see more details of this initiative before we decide the degree of cooperation.

Other International Bodies

Uri Shamir spent some time as a consultant to UNESCO headquarters in Paris. During these occasions, Uri discussed the possibility of enhanced cooperation between UNESCO and IUGG. In the IUGG family, IAHS has strong connection with the UNESCO because of the International Hydrological Program (IHP), and IASPEI too for involvement in International Decade of Natural Disaster Reduction (IDNDR). Strong personal ties have also been established over the years with people like Andras Szollosi-Nagy and Wolfgang Eder in UNESCO. GeoRisk can be one of the possibilities for future science plan that UNESCO may take up. We should strengthen these ties and look for the opportunity in the future.

Brian Kennett (IASPEI President) attended a meeting of Comprehensive Test Ban Treaty (CTBT), which is deploying an array of sensitive seismometers for monitoring explosions. Although nonscientific in primary purpose, the disclosure of the data may provide the IUGG (especially IASPEI) community with a new source of information. Brian explained the necessity of fast disclosure of the measurement data at the meeting.

Approaching the National Committees

One of the strongest wishes of the present Bureau is to renovate the method of information transfer. Information Technology made it possible to make a very quick and personalized contact from organizations to individuals (you can appreciate this by looking the AGU web page www.agu.org, for example). If we do not renovate ourselves to the today's technology, we become obscure and cannot serve the needs of the National members or Earth scientists at large. Through a very dedicated effort of the Secretariat in Boulder, a few of the new approaches are already implemented and are very effective. I am grateful to JoAnn Joselyn for these huge achievements.

Electronic Journal

The Secretariat publishes a monthly E-journal and distributes it to National Committees and Associations. This has been one of the greatest successes in our period. The concise news and reminder to National Committees in a timely manner encourages them to take active part in the IUGG business, such as election, vote for new members, etc. We anticipate that the subscription list may be expanded substantially in the near future; e.g., national geophysics related societies might be candidates for such distribution.

IUGG Home Page

The IUGG home page (www.iugg.org) has now been quite extended. In addition to static items such as the list of officers, links to Associations, statutes and by-laws, it has a list of coming meetings in the IUGG family, and most importantly, the minutes of the Bureau and Executive Committee meetings. By accumulating these archival materials, it will become easy for anybody to retrieve information about activities in the IUGG community. I am pleased by the effort of the Secretariat and hope strongly that more resources be spent in expanding the home page in the

future (hiring a company to keep the page updated may be one possible option).

Because of these efforts, the printed version of the IUGG Yearbook is losing the importance once it had. The publication is of course still necessary, but they are available also on the web page.

Membership Issues

During about one and half years since the beginning of my tenure, I spent a considerable time in writing to countries that are currently not IUGG members. I have written to about 40 Presidents of the Academy or similar organization in the non-member countries. JoAnn did similar exercise from the Secretariat. The results were very discouraging. Only one country (Ukraine) showed interest in becoming a full member. A few more countries rejoined the Union but as Associate (Armenia, Peru). I regret to say that this is the one area in which we are not at all successful in the quadrennial period.

Meetings in the IUGG Community and Other Travels

There is no doubt that the strength of the IUGG lies in the strength of its disciplinary Associations. Each of the seven Associations is an international champion in its field. However, there is also a danger in this system; if the Associations become too independent, the merit of the Union as promoting the interdisciplinary science will be lost. This fact is rather important as there are strong national and regional bodies such as AGU or EGU.

Of course, the Association leaders gather at the Executive Committee meetings, and there is General Assembly once in four years time. These are not enough in keeping good relation between the Union and Associations, however. During the last period, the President Peter Wyllie visited most of the Association Scientific Assemblies to meet and exchange opinions with the leaders of each Association. I followed this tradition and visited all the Associations when they held Scientific Assemblies, all in 2001 except IAVCEI that had theirs one year earlier. The visits were made to represent the IUGG at their ceremonial occasions, or to have a chance to meet and exchange opinions with some of the leaders of each Association. It was really good to know that all the Associations are quite active in science, and are eager to serve the needs of the international community. It also struck me that many of the Associations are trying to reformulate themselves to the changing world of today, just as the IUGG itself is trying now.

The following table lists the **foreign** travels I made during this period for attending the meetings of the IUGG or to represent IUGG at international meetings. I would like to point out that all of these travels were supported by Japanese sources. Travels in Japan included the Kick-off Meeting of the Third World Water Forum in Kyoto, the Bureau and Executive Committee meeting in Sapporo (July 2002), the Science Program Committee in Tokyo (March 2003), and a few other meetings with LOC people elsewhere.

Year	Period	Meeting	City/Country	Expenses
1999	09/26	ICSU General Assembly	Cairo, Egypt	410,000
	10/01			
2000	07/17	IAVCEI Scientific Assembly	Demopasa, Indonesia	228,000
	07/20			
	08/06	IUGG Bureau and EC Meeting	Boulder, USA	260,000
	08/11			
2001	07/15	IAMAS Scientific Assembly	Innsbruck, Austria	
	07/17			

	07/18	IAHS Scientific Assembly	Maastricht, Netherlands	498,000
	07/21			
	08/19	IAGA/IASPEI Joint Assembly	Hanoi, Vietnam	431,000
	09/01			
	09/05	IAG Scientific Assembly	Budapest, Hungary	329,000
	09/08			
	10/20	IAPSO Scientific Assembly	Mar del Plata, Argentina	421,000
	10/28			
2002	07/21	8th SEDI Meeting	Lake Tahoe, USA	244,000
	07/27			
	08/29	IUGG Bureau + FC Meeting	Cape Town, South Africa	450,000
	09/03			
	09/21	ICSU General Assembly	Rio de Janeiro, Brazil	450,000
	10/02			

Concluding Remarks

At the time I was elected to the post of the President, I was not quite sure how I could survive the four years period. Luckily many people helped me and I am very satisfied to report that the current Bureau and Executive Committee worked very well together to make the IUGG better.

Of course, our effort to reform the IUGG to meet the environment and needs of the today's world made only a small progress. But I believe that this is a very important first step in modernizing the IUGG to serve the geophysics community and the public better. The process we began should be continued at least a few more years until we feel that the IUGG is quite up to date for the 21st century.

There are important problems that we did not even touch, but which need to be addressed in the near future.

1. General Assembly.

Currently the GA is two weeks long and held once in every four years. The majority opinion of response to the questionnaire was that the current system is appropriate. However, we hear lots of arguments in many places that two weeks are too long, and four years are too far apart. To change the current system of GA is a formidable task, even if most of people agree. However, we should consider the fact that the Fall meeting of the AGU is by far the largest (with 9000 people compared with 4500 for IUGG GA) and yet only five days long.

2. Membership.

As noted above, we were not successful in recruiting new National members to the IUGG. There is tendency that some countries ask to demote in category, or to move to Associate membership because of the difficulty in paying dues. I don't know what we can in this situation. Another problem is that two of the seven Associations now have individual membership, which may give reasons to the countries to pay less to the IUGG. These are serious problems that may undermine the financial health of the IUGG.

3. Scientific quality vs. outreach.

The IUGG will lose attendance of the best scientists if we cannot offer the highest scientific quality in our meetings. On the other hand, we have to admit (sometimes) papers of lesser quality to encourage the participation of scientists from developing countries. In this respect, we cannot compete with societies such as AGU or EGU. They have members who can pay the dues to start with, and they also can impose any restriction based on the quality as they wish. But the outreach as well as the truly international nature are the well-

respected merit of the IUGG. We cannot dispose of this property without losing the identity! Then what can we do? I hope that the Bureau and Executive Committee in the next period are brave enough to tackle these formidable problems squarely. There is certainly a very great need for a body like the IUGG. Without such a dedicated international body with scientific expertise, it will be difficult for the governments and the general public to look for the proper method to tackle with the difficult problems of today; the global warming, the water supply, the mitigation of natural hazards, and the like. It is therefore quite necessary, in my opinion, that the IUGG reformulate itself and have strong and healthy foundation to meet difficult challenges.

It was my privilege to be the President of the IUGG in the last four years. I learned a lot in working for the IUGG, and I must say that I really enjoyed this difficult but rewarding task. I was guided, helped and encouraged by many people in the IUGG community, for which I am very grateful.

JoAnn Joselyn has been tirelessly working for the IUGG. Without her efforts, we could not achieve anything I reported above. It is nice to know that she continues to work for the IUGG as SG at least for the next four years. Uri Shamir was behind many international scenes to promote the profile of the IUGG. His deep thought and profound experience was indispensable for us. Other members of the Bureau were also quite helpful; Aksel Hansen looked after the financial health of the IUGG, Harsh Gupta was always very enthusiastic in any problem, Jonyung Chen and Tom Beer provided thoughtful opinions to discussion. I was very lucky to have very enthusiastic and cooperative Bureau.

The discussion in the Executive Committee was sometimes quite heated, but all the time it was motivated by the good will of the participants. I am grateful for the Presidents and Secretaries-General of the Associations for expressing their opinions quite frankly, and finally accepting the majority solutions for the sake of the Union.

I am especially grateful to Vere Shannon and Peter Wyllie, who formed the ad-hoc working group to investigate the problems the IUGG face, and prepared the document which served the basis for all the effort aiming at the reform of the IUGG. Without their dedication and thoughts, it was doubtful if we could summarize the situation to come up with a realizable plan to work on.

Finally, I would like to thank the effort of the Local Organizing Committee and Scientific Program Committee for the 23rd IUGG General Assembly. Professors Seiya Uyeda (Chair, LOC), Atsuhiko Nishida (Chair, SPC), Kiyoshi Suyehiro, Yosuke Kamide and all others did a very fine work in organizing the meeting. It is quite impressive that the LOC provided the largest amount of money in the GA history for supporting the scientists attending the GA.

All the foreign travels I made as the IUGG President were subsidized by Japanese sources, Ministry of Education, Japan Society for Promotion of Science, or Okayama University. The travel expenses quoted in the above table amounts to Yen 3,721,000 (approximately USD 31,000 using the exchange rate of 120 Yen/USD) On behalf of the IUGG, I am most grateful to these agencies for supporting me to travel around in the cause of the IUGG.

Masaru Kono, President
(Prepared on 2003/03/25)

QUADRENNIAL REPORT OF THE VICE PRESIDENT DR. URI SHAMIR

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

This is my second quadrennial period as Vice President of IUGG, in which capacity I have been serving since the Boulder General Assembly in 1995, under two Presidents: Peter Wyllie (1995-1999) and Masaru Kono (1999-2003).

The main activities I have undertaken during the last quadrennium are:

IUGG Structure, Goals and Objectives

An elaborate process has been undertaken during this past quadrennium, to review IUGG's structure, goals and objectives. A Working Group led the deliberations by the Bureau and Executive Committee on these matters. Its members are:

Harsh Gupta
JoAnn Joselyn
Masaru Kono
Uri Shamir (Chair)
Peter Wyllie

Vere Shannon was instrumental in initiating and advancing the process during its early stages. The outcome of the process has been summarized and a report is presented to the Council

Statutes and By-Laws Committee

The Statutes and By-Laws Committee members are:

Bob Engdahl
Roland Schlich
Uri Shamir (Chair)
Vere Shannon
Peter Wyllie

The Committee assembled the proposals for modifications of the Statutes and By-Laws and prepared them for consideration by the Council (see separate report).

Geosciences: The Future

At the meeting of the Executive Committee and Program Committee for Sapporo 2003, in 2001, I proposed setting up a Working Group titled "Geosciences: The Future" (WG-GTF) comprised of young geo-scientists (~30 years old), one from each Association, with the mission of charting a "road map" for the geosciences into the future and examining the role that IUGG should play in advancing the geosciences.

A Union Symposium U8 was introduced into the program for Sapporo 2003, under the same title "Geosciences: The Future", to be organized and presented by the WG.

After the Sapporo meeting in 2001, the Associations were asked to designate the members of the WG-GTF. They are

IAG – Laura Marlene Sanchez Rodriguez
Instituto Geografico Agustin Codazzi, Colombia
Currently in Dresden, Germany

IAGA - Aaron J. Ridley
Space Research
The University of Michigan

IAHS – Taikan Oki
Univeristy of Tokyo, Japan

IAMAS – Sam Adlen
Oxford University, UK

IAPSO – Alan Aldrin Meyer (resigned; a replacement is being sought)
University of Cape Town, South Africa

IASPEI – Kazunori Yoshizawa
University of Hokkaido, Japan

IAVCEI – Emily Brodsky (Chair)

Department of Earth & Space Sciences
UCLA, USA

IUGG - Uri Shamir, IUGG Vice President (Coordinator)
Technion – Israel Institute of Technology

The WG held two lengthy conference calls, at which the objectives and modus operandi of the WG were discussed and agreed. Emily Brodsky accepted to be Chair, and Sam Adlen the Editor. The WG prepared a proposal to the Bureau, and a budget of \$ 12,000 was allocated for the WG's operation leading to Sapporo.

Each member of the WG prepared a draft paper for her/his science, and these were then discussed, addressing in addition: (a) common topics and interactions among the disciplines, and (b) involvement of young scientists from all countries, especially developing countries. Integrating papers on these two aspects are being prepared, and the whole set will constitute the basis for the presentation in Symposium U8. Consideration will be given after Sapporo to publishing the papers as a set in a suitable journal.

The WG is meeting in Nice, at the joint AGU/EGS Conference in early April, to continue its preparation for Union Symposium U8 in Sapporo.

I have suggested to the WG-GTF to consider after they present Symposium U8 in Sapporo to extend the existence of the WG, possibly with some additional (young) members, to continue as a forum for brainstorming about the future of geosciences and the role of IUGG.

ICSU Priority Area Assessment Panel on the Environment and its Relation to Sustainable Development

I have been appointed by ICSU, upon a proposal made by IUGG, as member of the Panel, which is composed of 11 scientists from around the world, each a leader in her/his field.

The major goal of the Panel on the Environment and its Relation to Sustainable Development is to review the environmental activities in the ICSU family and to address whether further collaborations could be stimulated. In particular, strengthened linkages of ICSU environment programs with other ICSU bodies, and the international scientific unions. The links to other partners, such as UNESCO, should also be considered. The Panel is soliciting inputs from all ICSU associated bodies, and will be preparing its report to ICSU's Committee on Scientific Planning and Review (CSPR), to be submitted by the end of 2003.

Connections with UNESCO

I have continuous working relations with UNESCO, especially with the Division of Water Sciences and its IHP and WWAP programs, and also with the Division of Earth Sciences and its IGCP program and the Ocean Sciences Section and its IOC program. I have used the opportunity of my several sojourns at UNESCO to strengthen the relations of IUGG with these UNESCO sections and their programs.

Uri Shamir
March 2003

QUADRENNIAL REPORT OF THE SECRETARY GENERAL**DR. JOANN JOSELYN****23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003****Overview**

IUGG is a not-for-profit scientific organization dedicated to promoting and co-ordinating worldwide studies of the Earth and its environment in space. It is a union of seven geophysical Associations, each dedicated to their scientific discipline, but with overlapping interests and complementary strengths. The Union is financially supported by Member Adhering Bodies that benefit from the knowledge, data, services, and scientific talent that are concentrated within each Association and inter-Association body.

The Activities of the Union during the past quadrennium are summarized below, but there are several activities worthy of special note.

As a priority, the Bureau and Executive Committee initiated a critical evaluation of Union structure and activities and devoted a significant portion of each Bureau and Executive Committee meeting to this end. A questionnaire was designed and sent to each of the Adhering Bodies and Associations. The results were analyzed and recommendations were made. This work is summarized in a special report in the Council Agenda book authored by U. Shamir and H. Gupta that is included under Agenda item 13. Encouragingly, no serious strategic deficiencies were identified, but there were a number of suggestions for significant improvement that future Executive Committees will wish to address.

Communications and outreach among the Adhering Bodies and the IUGG Associations were modernized. The IUGG Web page was renamed (<http://www.IUGG.org>) and an increasing amount of IUGG information, such as the Statutes and By-laws, scientific and administrative reports, a calendar of meetings, and the IUGG Yearbook, is now available on this site. A new color brochure explaining and promoting IUGG was produced and distributed, and a monthly e-mail newsletter, the IUGG E-Journal, was initiated. The E-Journal, which is intentionally short and simple, has proved to be a particularly effective tool to exchange information on a timely basis. The IUGG Yearbook itself is undergoing modernization with the goal of increasing its effectiveness while reducing costs and administrative overhead.

Arrangements were made to archive the original records of the Union in the Niels Bohr Library of the Centre for the History of Physics of the American Institute of Physics. The Library is located in College Park, Maryland (U.S.A.). The inventory/finding aid for the IUGG records are online at: http://www.aip.org/history/ead/aip_iugg/20010000_content.html

A new inter-Associations Commission on Geophysical Risk and Sustainability was established. This Commission has been extraordinarily active; a summary of their work is included within the Agenda book (Item 10). A new Union Working Group (WG) on Geophysics: the Future was established. The membership of this WG is made up of young scientists nominated by their disciplinary Associations. A report by this group will be presented at a special Union symposium (U8) at the Sapporo General Assembly. In addition to these Union bodies, several Associations initiated new inter-disciplinary working groups. Among these are Electric and Magnetic Studies of Earthquakes and Volcanoes

(EMSEV) and the Joint Commission on Groundwater-Seawater Interactions.

A steering Committee to plan and coordinate activities celebrating the 50th Anniversary of the International Geophysical Year (IGY) was established. This Committee is chaired by M. Kuhn (Austria).

A total of \$50,000 in grants to support meetings was allocated to the organizers of 22 symposia, workshops, and schools in 17 different countries. In addition special awards were made to support inter-Association workshops in the Philippines and Malaysia.

New in this quadrennium, grants were allocated to support inter-Association initiatives that benefit developing countries. The total funds distributed to date is \$121,905 supporting 10 separate activities. These activities were two South American workshops on geodesy, the initiation of a Joint Commission on Groundwater-Seawater Interactions, the GeoRisk Webcyclopedia project, support for exploring the possibility of a joint Assembly in India, initiation of a Joint Working Group on Subduction Zone studies, support for an historical database on tsunamis and studies of submarine slumping as a tsunami mechanism, GIS positioning of tide gauges, support for the joint IAG/IAPSO/IPGH SIRGAS (Systema de referencia geocentrico para las Americas) committee, a detailed study of active tectonics of the Afro-Arabian rift region using palaeomagnetic and potential field data, and support for the Union initiative Geophysics: The Future.

The annual reports to ICSU for 2000, 2001, 2002 and 2002 were completed as required, and have been posted on the IUGG web site. IUGG has responded every year to the opportunity to propose initiatives for ICSU grants. IUGG received an ICSU grant in every year of this quadrennium; the total funds received were \$73,000 including a block grant of \$5000 awarded by ICSU to all Unions in 2000. The successful initiatives were for two separate proposals for INTERMAGNET (IAGA), support for the Third Meeting of the Asian Seismological Commission (IASPEI), support for the Joint IAPSO/IABO (International Association for Biological Oceanography) Scientific Assembly "An Ocean Odyssey," Rescue of Old Analogue Magnetograms by converting to Digital Images (IAGA), and support for Scientific Libraries in Developing Countries (IAHS).

Preparations for the 23rd IUGG General Assembly have been extraordinarily successful. In addition to managing the necessary details to produce the Assembly Circulars and web site, the Japanese Local Organizing Committee raised 50 million yen, an extraordinary amount, to support attendance. Ultimately, with contributions from IUGG (\$70,000) and the Associations themselves, well over \$500,000 will be allocated to assist attendance at the General Assembly.

The sections below summarize matters of Union membership, actions of the Bureau and Executive Committees, and the Secretariat itself. The work of the Associations, the inter-Associations Commissions, and other matters of scientific interest are included in Agenda items 9 and 10.

MEMBERSHIP IN THE UNION

IUGG has 63 Member Countries with distribution throughout the world as follows:

Europe	31
North and Central America	4
Asia	16
Africa	5
South America	5
Oceania	2

This is 12 less than at the closing of the 22nd General Assembly (Birmingham, U.K.; 1999). Several countries have withdrawn from membership due to non-payment of dues according to IUGG Statutes. These include Albania, Bolivia, Ethiopia, Greece, Guatemala, Democratic Republic of Korea, and Ex-Yugoslavian Republic of Macedonia, Malaysia, Mongolia, Saudi Arabia, Sudan, Tanzania, Tunisia, Uruguay, and Zimbabwe. The number would be larger if not for the 1999 change in IUGG Statutes and By-laws to permit

members in Associate Status. The Secretariat believes that this provision has preserved the adherence of three countries (Morocco, Nigeria, and F.R. Yugoslavia – now known as Serbia and Montenegro), and has permitted several other countries the opportunity to initiate or re-initiate their ties with IUGG (Armenia and Peru).

Three new members have been provisionally added: Armenia, Colombia (re-admittance), and Peru (re-admittance). Applications are in progress at this time in at least 3 countries for admittance or re-admittance to IUGG. Unfortunately, several countries are in observer status according to Statute 14 owing to serious arrears of payment. These matters are also discussed in the Report of the Treasurer, and will be reviewed by the Council under Agenda item 6.

The current membership history is summarized in the table below.

MEMBER COUNTRIES	EPOCHS OF ADMISSION & TERMINATION	CATEGORIES	UNITS
<i>ALBANIA</i>	<i>1997-2002</i>		
ALGERIA	1971	1	1
ARGENTINA	1927	4	5
ARMENIA	2000	A	0
AUSTRALIA	1919	5	7
AUSTRIA	1948	3	3
BELGIUM	1919	4	5
<i>BOLIVIA</i>	<i>1960-2000</i>		
BRAZIL	1922	3	3
BULGARIA	1930	1	1
<i>BURUNDI</i>	<i>1987-1995</i>		
CANADA	1919	6	10
CHILE	1924	2	2
CHINA	1977	6	10
CHINA – Acad. Sciences in Taipei	1995	4	5
COLOMBIA	1938 –1971, 2000	1	1
CROATIA	1992	1	1
<i>CUBA</i>	<i>1960-1996</i>		
CZECH REPUBLIC	1993	1	1
<i>CZECHOSLOVAKIA</i>	<i>1924-1993</i>		
DENMARK	1923	4	5
<i>DOMINICAN REP.</i>	<i>1957 -1971</i>		
EGYPT	1924	2	2
ESTONIA	1991	1	1
<i>ETHIOPIA</i>	<i>1952 - 2000</i>		
FINLAND	1927	3	3
FRANCE	1919	8	20
<i>GERMANY /DEM.REP./</i>	<i>1964 - 1990</i>		
GERMANY F.R.	1951	8	20
<i>GHANA</i>	<i>1957 -1987</i>		
<i>GREECE</i>	<i>1922-2002</i>		
<i>GUATEMALA</i>	<i>1957-2000</i>		
<i>GUINEA</i>	<i>1987-1995</i>		
<i>HAITI</i>	<i>1956 -1971</i>		
HUNGARY	1930	2	2
ICELAND	1967	1	1
INDIA	1947	5	7
INDONESIA	1951	1	1
IRAN	1957	1	1
<i>IRAQ</i>	<i>1983-1996</i>		
IRELAND	1946	2	2
ISRAEL	1951	1	1
ITALY	1919	6	10
<i>IVORY COAST</i>	<i>1975-1996</i>		
JAPAN	1919	8	20
JORDAN	1979	1	1
<i>KENYA</i>	<i>1975-1997</i>		
KOREA	1960	2	2
<i>KOREA /DEM.REP./</i>	<i>1967 - 2000</i>		
LEBANON	1967	1	1
<i>LIBYA</i>	<i>1979-1996</i>		
LUXEMBOURG	1971	1	1

MEMBER COUNTRIES	EPOCHS OF ADMISSION & TERMINATION	CATEGORIES	UNITS
<i>EX-YUGOSLAVIAN REP. OF</i>			
MACEDONIA	1995 - 1995		
MADAGASCAR	1967 - 1995		
MALAYSIA	1967 - 2002		
MEXICO	1922	2	2
MONACO	1967	1	1
MONGOLIA	1995 - 2001		
MOROCCO	1924	A	0
MOZAMBIQUE	1983	1	1
MYANMAR (BURMA)	1957	1	1
NEPAL	1975 - 1987		
NETHERLANDS	1925	4	5
NEW ZEALAND	1927	1	1
NIGERIA	1971	A	0
NORWAY	1923	4	5
PAKISTAN	1952	2	2
PERU	1925 - 1979, 2000	A	0
PHILIPPINES	1951	3	3
POLAND	1924	2	2
PORTUGAL	1919	2	2
ROMANIA	1930	1	1
RUSSIA	1992	6	10
SAUDI ARABIA	1971 - 2001		
SENEGAL	1960 - 1995		
SERBIA and MONTENEGRO (**)	1996	A	0
SIERRA LEONE	1967 - 1983		
SLOVAK REPUBLIC	1993	1	1
SLOVENIA	1994	1	1
SOUTH AFRICA	1924	3	3
SPAIN	1922	5	7
SUDAN	1955 - 2000		
SWEDEN	1923	4	5
SWITZERLAND	1923	3	3
SYRIA	1948 - 1995		
TANZANIA	1975 - 2000		
THAILAND	1923	2	2
TUNISIA	1927 - 2001		
TURKEY	1949	2	2
U.K.	1919	8	20
URUGUAY	1924 - 2000		
USA	1919	11	35
USSR	1954 - 1992		
VIETNAM	1931	1	1
VENEZUELA	1975	1	1
YUGOSLAVIA (*)	1924 - 1991		
ZAIRE	1991 - 1997		
ZIMBABWE	1967 - 2000		

(*) Adhesion in 1924 under the name of « Royaume des Serbes Croates et Slovènes » becoming Yugoslavia in 1929. Membership terminated in 1991 considering the geo-political changes.

(**) Adhesion in 1996 under the name of the Federal Republic of Yugoslavia, which was changed in 2003 to Serbia and Montenegro.

ADMINISTRATION

Bureau

The Bureau of the Union consists of the President M.Kono (Japan), Vice-president U. Shamir (Israel), Secretary-General J.A. Joselyn (U.S.A.), Treasurer A. Hansen (Denmark), and 3 other Members. At the 1999 Birmingham General Assembly, J-Y. Chen (China), H. Gupta (India) and V. Shannon (South Africa) were elected as Bureau Members. However, V. Shannon resigned in March 2001 and the Executive Committee appointed T. Beer (Australia) to fill his term.

The Bureau met three times:

- in Boulder, Colorado U.S.A. (August 7-8, 2000)
- in Sapporo, Japan (July 30, 2001)
- in Cape Town, South Africa (August 31 - September 1, 2002).

It was decided by the Bureau that a summary of the Minutes of these meetings should be posted on the IUGG web site and this has been done for the 2001 and 2002 meetings. The Boulder meeting was followed on August 9 by a meeting with the Association Presidents and Secretaries General and the Sapporo meeting was followed by a formal Executive Committee meeting (August 1-2, 2001). The Cape Town meeting in 2002 was followed on 2 September by an informal meeting with two members of the IUGG Finance Committee.

Discussions at the Bureau meetings included the following:

IUGG Membership. The decline in the number of Adhering Bodies and the extent of the arrears in dues has been a topic of concern at each meeting. Possible new members and efforts to encourage dues payments were discussed and actions were taken with varying degrees of success.

IUGG Financial Health. The state of the budget was considered at each meeting, and was found satisfactory. At the recommendation of the Treasurer, it was decided that the IUGG Yearbook would no longer be sold beginning in 2004. The Yearbook is now posted on the IUGG web site and costs to produce the Yearbook have been significantly reduced. It is no longer cost-effective to invoice and collect payment from the few subscribers that remain.

IUGG Goals and Vision. A full report on this major effort is included as item 13 of the Council Agenda. Outreach to countries that need assistance to develop their capacity for scientific research remains a high priority.

Association individual memberships. Two Associations are raising money for their purposes by promoting individual paid memberships. The pros and cons of this practice and possible conflicts with IUGG Statutes and By-laws were discussed.

IUGG relationship with ICSU. The ICSU General Assembly was held in Rio de Janeiro, Brazil, from September 21-25, 2002. M. Kono and J.A. Joselyn attended for IUGG, although H. Gupta also attended as a presenter and as a representative for India. Specific topics of discussion included the ICSU Grants programme, actions of the ICSU Executive Committee without consultation with the Unions, appointments to various ICSU Committees, and the successful admission of a new Union – the International Society for Photogrammetry and Remote Sensing. In February 2001, a meeting of the ICSU Unions was held in Paris; J.A. Joselyn attended that meeting, and also attended an informal meeting of some of the Unions on February 7-8, 2003, also in Paris. The latter meeting was focused on a proposed inter-Union initiative on Science for Health and Well-being.

IUGG relationship with IUGS. IUGG's relationship with the International Union of Geological Sciences (IUGS) has significantly strengthened over the past several years to the benefit of all.

The 2003 General Assembly. The Chair of the Scientific Programme Committee was appointed and administrative matters concerning the 23rd General Assembly were decided. The Chair and members of the Nominations Committee (Agenda item 5), Statutes and By-Laws Committee (Agenda item 7), and Resolutions Committee (Agenda item 16) were appointed. It was decided to reduce the time spent in Council meetings in Sapporo. Council business meetings will be streamlined by distributing reports and other information in advance of the General Assembly so that to the great extent possible, business can be confined to matters requiring decisions. The standing agreement with the American Geophysical Union was renewed regarding publication of monographs arising from Union symposia at IUGG General Assemblies.

The 2007 General Assembly. Inquires were answered from several countries, and two formal bids were received. These were from the Australian Academy of Sciences who propose Melbourne, Australia, and the University of Perugia in cooperation with the National Research Council of Italy through the Research Institute for Hydrogeological Protection, who propose Perugia, Italy. Presentations will be made to the Sapporo Council meeting for a final determination (Agenda items 8 and 15) by the Council.

Executive Committee

The Executive Committee (EC) formally consists of the Bureau, the immediate past President of IUGG (P. Wyllie, U.S.A.), and the Presidents of the Associations. Association Secretaries-General are always invited to attend as well, with voice but without vote. The Executive Committee met formally one time, in Sapporo, Japan, August 2001. Following a useful tradition begun in 1996, the Association Presidents and Secretaries General were also invited to participate in discussions following the first Bureau meeting in Boulder in 2000. It is expected that this tradition will be continued. At the 2000 and 2001 meetings, the Associations reported in detail on their scientific activities, projects and meetings, allowing for fruitful discussions across all disciplines covered by IUGG. (Annual reports from the Associations are summarized under Agenda item 9). In practice, through the medium of e-mail, the members of the EC are consulted constantly with regard to matters arising at the Secretariat.

The main outcomes of the Executive Committee meeting were the following:

General preparations for the 23rd G.A. The 2001 Executive Committee met in Sapporo so that site tours could be taken and full interaction with the chairpersons of the Local Organising Committee (S. Uyeda and K. Suyehiro) and of the Program Committee (A. Nishida) would be possible.

The selection of the Theme of the scientific programme - The State of the Planet: Frontiers and Challenges. Prof. Steve Sparks, IAVCEI President, accepted the task of coordinating 6 Union Symposia addressing this theme. The four Union Lecturers, selected by the IUGG President, will be coordinated with the Union Symposia. The Scientific Programme Committee (SPC) met prior to the Executive Committee meeting, allowing for the construction of the core scientific program of the General Assembly. They decided to limit the number of abstracts for first authors to a maximum of three. They further decided to meet again in San Francisco, California (U.S.A.) on December 8-9, 2001 to finalize the Scientific Programme for the Second Circular (including the Call for Abstracts). The final meeting of the SPC was March 6-7, 2003, in Tokyo, Japan.

Grants to assist attendance at the General Assembly. The Associations agreed on the rules to be used to allocate funds raised to support attendance at the General Assembly.

Discussion regarding the overall length of the General Assembly. While many arguments were presented in favour of shortening the GA, it was ultimately agreed that the scientific and administrative business of the GA requires two weeks, including the intervening weekend.

Resolutions for the Sapporo General Assembly. Because the Bureau has decided to limit the time planned for Council meetings, Associations were asked to prepare Resolutions proposed for Union adoption as early as possible so that open discussion could begin before the General Assembly.

Review of the issues regarding erosion of IUGG Adhering Bodies. Associations were asked for their help to initiate communications with the scientists who are active in each discipline, especially in countries that do not now adhere to IUGG.

Discussion of Inter-Associations initiatives. The procedures being used to invite proposals and to make awards for the new initiative money were reviewed and approved.

Scientific Committee on the Lithosphere (SCL/ILP). Dr. Taira, the new SCL/ILP President, made a presentation and requested an increase in the IUGG contribution to the SCL/ILP. After discussion, it was decided not to increase the contribution in the next quadrennium without additional justification for an increase.

The World Summit on Sustainable Development (WSSD; also known as Rio+10) in Johannesburg, South Africa, in September 2002. Possible IUGG contributions to ICSU preparation for this important international event were considered.

IGY+50. The 50th anniversary of the International Geophysical year will occur in 2007, the year of the 24th IUGG General Assembly. Planning for the next quadrennium should include celebrations of this special anniversary.

Guidelines for IUGG co-sponsorship of scientific meetings. It was agreed that liberal use of the IUGG name was approved if an IUGG or ICSU body recommended the meeting. However, financial assistance should be limited for meetings not directly linked to Associations or Inter-Associations bodies.

IUGG Goals and Vision. The results of the survey questionnaire distributed by the Bureau task force were discussed at length and recommendations were voiced.

Secretariat

The Statutes and By-laws provide that the daily affairs of the Union are managed by an elected Secretary General who attends to correspondence, circulates information, preserves the records, prepares reports of the Union's activities, and arranges meetings of the General Assembly, the Council, the Executive Committee and the Bureau, including preparing and distributing the agendas and the minutes of all their meetings. But there is much more!

During the past 4 years the IUGG Web page became an important tool for information and outreach. The address was changed to <http://www.IUGG.org>, and links to all of the Associations and related organizations were established. Information is posted in English and French to the greatest extent possible thanks to the assistance of Pierre Hubert, the IAHS Secretary-General. Information posted includes sections on the IUGG General Assemblies including the recent addition of the 1999 Birmingham Assembly Abstracts, Registrants and Comptes Rendus, and IUGG publications including the 2003 Yearbook, back issues of the monthly E-Journal, official reports including annual reports, and the IUGG Brochure. The IUGG Officers, inter-Association Committees and Commissions, Statutes and By-laws are posted, as well as Union Resolutions from past General Assemblies. Summaries of the IUGG Bureau and Executive Committee meeting Minutes are also available as is a calendar of upcoming conferences, workshops, and meetings, as they are known. A major upgrade to the IUGG web site is planned in the next quadrennium that will begin to incorporate aspects of the IUGG Yearbook.

In preparation for the Bureau meeting held each year, a detailed report is prepared on the activities of the Secretariat since the last meeting. Those reports are a permanent record

of each Bureau meeting. The following activities, not already mentioned above, are selected from those reports to illustrate the variety of duties performed.

For IUGG: produced the monthly E-Journals and the annual Yearbook; dealt with all matters of membership; hosted the 2000 Bureau meeting and the informal meeting with Association Presidents and Secretaries-General; assisted with the search for a Bureau member to replace V. Shannon; assisted with distributing and receiving the Goals and Vision (Strategic Planning) questionnaire; appointed IUGG representatives to a number of committees and meetings; served as a point of contact for the 2003 General Assembly Local Organizing Committee; served as Secretary of the Nominating Committee in preparing and mailing circulars, and in encouraging nominations by the Member Countries; met with Association officers on several occasions; filed a protest with the ICSU Special Committee on the Freedom of Conduct of Science regarding the denial of visas for two Chinese scientists expecting to participate in a meeting in the U.S.A.; wrote a letter of support for the IAHS nomination for the King Hassan II World Water Prize; reviewed the proposed changes to the IAG Statutes and By-laws; facilitated the work of the IUGG Statutes and By-laws committee; solicited reports and composed the agendas and agenda books for the Bureau, Executive Committee, and Council meetings to be held at the 2003 General Assembly in Sapporo.

For ICSU: wrote a report on the varied educational activities within IUGG, and another one on capacity building activities; endorsed ICSU membership for the International Society for Photogrammetry and Remote Sensing; provided nominees for the United National University Council, evaluators for UNESCO programmes, ICSU officers, the Priority Assessment Panel on Ethics, and the Assessment Panel on Asteroid Impacts and Human Society; provided nominations for the Bureau of the Scientific Committee on the Lithosphere; provided input for agendas for the 2001 Unions meeting and the 2002 ICSU General Assembly; provided input for papers prepared for the World Summit on Sustainable Development; facilitated the preparation of an ICSU statement on Water Systems including Quality (written by J Rodda, IAHS, and R Naiman, SCOWAR); provided input to a web survey on the Environment and Sustainable Development; provided input on Emerging Issues; wrote letters of endorsement for a number of ICSU grant proposals by other ICSU bodies; prepared a summary of Association suggestions for an inter-Unions initiative on Science for Health and Well-being.

Travel included Toulouse, France to facilitate transfer of the duties of Secretary-General from Georges Balmino; Pasadena, California (U.S.A.) to attend a strategic planning meeting regarding the proposed restructuring of the International Association of Geodesy; Warsaw, Poland to attend a COSPAR Council Meeting and Scientific Assembly; Sapporo, Japan to attend a SCOSTEP meeting and a meeting of the 2003 GA Local Organizing Committee; Paris, France to attend the ICSU Unions meeting; Sapporo, Japan to participate in the IUGG Bureau and Executive Committee meeting; New Delhi and Hyderabad, India, to consult with Bureau Member H. Gupta; Singapore to investigate the possibility of IUGG membership; Hanoi, Vietnam to attend the beginning of the IAGA Scientific Assembly; San Francisco, California (U.S.A.) to attend a meeting of the General Assembly Scientific Programme Committee; Paris, France to attend the IUPAP International Conference on Women in Physics and visit ICSU headquarters; Cape Town, South Africa to participate in the 2002 IUGG Bureau

meeting; Rio de Janeiro, Brazil, to participate in the 2002 ICSU General Assembly; Paris, France to participate in an inter-Union meeting at ICSU and meet with D. Pugh, President of the Federation of Astronomical and Geophysical Data Analysis Services; Perugia, Italy, to visit a proposed venue for the 2007 General Assembly; and Tokyo, Japan, to attend the final meeting of the General Assembly Scientific Programme Committee.

It has been my privilege to serve IUGG in this office for the first four years of an eight-year term. Every day has been a “learning experience” full of challenge and surprise. I have benefited enormously from the guidance and assistance of the members of the IUGG Executive Committee, especially President Masaru Kono and Treasurer Aksel Hansen, and the immediate past-Secretary General Georges Balmino. Pierre Hubert, the Secretary General of IAHS, has been generous with his time to assist with translations into French.

The office of the Secretary General is hosted by the University of Colorado within CIRES – the Cooperative Institute for Research in Environmental Sciences, and is financially supported by a grant from the US National Research Foundation in cooperation with the Board on International Scientific Organizations within the National Research Council of the National Academies. The grant permits the hire of part-time assistants who help manage the database, correspond with the Member Adhering Bodies and IUGG officers, and prepare reports and mailings. During the past 4 years, it has been my pleasure to have worked with Amy Shoffner and Tamara Palmer, and now with Ryan Aucone who has been immensely helpful as we prepare for the Sapporo General Assembly. I appreciate his talent, dedication, and good humor.

Jo Ann Joselyn

March 24, 2003

QUADRENNIAL REPORT OF THE TREASURER**DR. AKSEL HANSEN****23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

This report is to be used in the next coming IUGG general assembly in Sapporo. It contains a financial report and some statistical information about the union. The financial report includes accounting of IUGG finances for two periods

1) 1996 – 1999 (each year plus accumulated) compared to the total budget for the same period
(Enclosure 1)

2) 2000 – 2002 (each year and accumulated) (enclosure 2)
This new procedure for reporting on the financial status of the union is done in agreement with a recent decision taken by the Finance Committee. In Boulder the IUGG Council adopted a budget for the 4 yr period 1996 to 1999. With a general assembly in Birmingham in the middle of 1999 the treasurer couldn't give a full report of the complete 4-year period. This is now possible and a one page accounting for the actual budget period is enclosed. The accounting is an extension of the report available in the Comptes Renduz from Birmingham 1999.

In Birmingham the treasurer reported on the period 1995 to 1998 (see Comptes Renduz). Here it suffices to say that all comments in his report can be carried over to the period 1996 to 1999. For instance it can be noted that a substantial saving was done in the administration expenditures (personnel and travelling). A surplus of \$200.000 was achieved in the period.

Likewise a complete accounting for the present period (2000-2003) cannot be done for the whole period for which the Council adopted a budget at the general assembly held in Birmingham in 1999. Therefore, I have enclosed here an accounting for the years 2000 to 2002 only. At the general assembly in Sapporo in July 2003 an estimate for the year 2003 will be presented.

The budget for the period 2000 to 2003 is presented in attachment no 3. A closer analysis of the accounting for the years 2000 to 2002 follows here.

Incomes:

The first 3 years of the budget period 2000 – 2003 is characterized by two tendencies: less income than anticipated in the budget and less expenses. However, these two tendencies do not cancel each other; the result is a substantial saving by the end of 2002. A comparison of the accounting with the budget year by year reveals that IUGG has not been able to reach the target set up for income from dues. It is noticed that many adhering bodies, especially those of category 1 members, experience severe problems in raising the money to pay their dues.

In the years 2000 to 2003 15 countries have withdrawn from IUGG, Malaysia and Greece being the most recent ones. Out of the 15 withdrawn members only Greece was above category 1. At the same time one new category 1 member plus two A-members have joined IUGG. And 3 members have move from paying category to non-paying status. One member has lowered its category from 3 to 1. The smaller income from dues should be contrasted with the increasing cost of 1 unit of dues to IUGG. Over the 4 years, from 1999 to 2003, the price of 1 unit has gone up by 12% to \$1455 in 2003.

As we are using a cash-flow system in the accounting, postponement of payments from one year to another can some times make a direct comparison between budget and accounting difficult, if not impossible. This is the case for the income lines 3 and 4 for year 2000. The net surcharge from Birmingham 1999 (without the surcharge paid directly to the associations) and the ICSU payment for 1999 were both delayed almost a year. The net surcharge from Birmingham was \$18.500 (605 participants) and IUGG's share of the surplus was app. \$34.000 (line 6.c in the 2001 column!). Another important point is the much lower interest of a more or less constant balance of the order of one year's turn over. The decreasing interest rate obtainable in banks is a result of a generally declining interest rate worldwide. The treasurer is investigating possibilities for higher interest rates than the current 1-2 percent obtainable in Danish banks.

Expenditures:

Generally speaking the cost of personnel is much lower than budgeted. In the budget about \$61.000 was allocated for this purpose for the years 2000-2002, but only \$19.000 was spent. Equivalently, the cost of traveling is also significantly lower, app. \$100.000 versus \$150.000 in the budget. Also the cost of printing of the Yearbook has been significantly reduced.

The allocations to the Associations cannot be compared directly because certain problems at association level have lead to significant deviations in this specific 3-year period. The problems are now resolved and the allocations for the full period 2000 to 2003 will be in accordance with the budget.

Expenses under lines 15.1b to line 17 follow the budget closely. In Birmingham a new line 17 was established to fund inter-association initiatives including countries in need. The total allocated amount for the whole period was \$125.000; by the beginning of 2003 almost the entire allocation was awarded as grants.

Balances:

Because the savings in administration and printing more than cancel the lower income from dues, the balance as of December 31, 2002, is about \$100.000 higher than anticipated in the budget. For the year 2003, however, the expenses for traveling will be much higher than during the years 2000- 2002 (due to administrative traveling to Sapporo and \$70.000 allocated to grants for the assembly). Therefore, it is expected that over the full 4-year period the balance will increase less.

In general, one can say that the economical situation of IUGG is sound and there is a balance that allows IUGG some space for new initiatives. The problem of keeping the members in the union is serious and needs the full attention of the union and the member countries. But new visionary initiatives concerning the union as a whole are expected to give new momentum to the process of recruiting members.

I want to thank all people I have been in contact with concerning IUGG matters for good cooperation. In particular, I will send many thanks to Secretary General JoAnn Joselyn and her assistants (Tamara Palmer and Ryan Aucone), and to the Bureau and the Presidents and Secretary Generals of the Associations. I have had a close cooperation and many

stimulating discussions with the IUGG Finance Committee. Anders Svensson has been a very good assistant treasurer and he has made important contributions to the smooth running of the treasurer's office. Likewise Lise Gregersen – and Signe Bohn-Jespersen during the first half of 2001 - has been a very reliable assistant in running the general administration of my office. Finally I also want to thank my

predecessor, Søren Gregersen, for all the help he has given me over the years and for many good and stimulating discussions.

Best regards
Aksel Walløe Hansen
Treasurer, IUGG

Appendix with statistical data on IUGG

In the following a summary of the relevant information about IUGG is given.

First of all as of January 1st, 2003, IUGG has 63 member countries (12 down compared to 1999) representing 274 units. Early 2003 we have received payment from 243 units for 2002. The remaining 31 units are represented by 12 members in observer status.

1) Membership tables as of March 6, 2003

Category	Units in category	Number countries	Number of units	Paid 2002 numbers	Units	Observers Units	Numbers
A	0	5	0	5	0	0	0
1	1	21	21	16	16	5	5
2	2	12	24	8	16	8	4
3	3	6	18	5	15	3	1
4	5	7	35	6	30	5	1
5	7	3	21	3	21	-	-
6	10	4	40	3	30	10	1
7	15	-	-	-	-	-	-
8	20	4	80	4	80	-	-
9	25	-	-	-	-	-	-
10	30	-	-	-	-	-	-
11	35	1	35	1	35	-	-
12	40	-	-	-	-	-	-
Total		63	274	51	243	31	12
USD (2002 values)			391.820		347.390	44.330	

2) Countries in Observer Status (countries in arrears for 2002 and/or earlier)

Category	Units	Countries
1	5	Bulgaria, Lebanon, Myanmar, Mozambique, Algeria
2	8	Pakistan, Portugal, South Korea, Turkey
3	3	Philippines
4	5	Argentina
5		
6	10	Russia
7		
8		
9		
10		
11		
12		
Total	31	12 countries

In the next table we can see that the members in observer status together owe \$71.808 to IUGG. For the whole period the amount "lost" by members converting to Associate status and members withdrawing from the union is a substantial amount of money that cannot be expected to be recovered.

3) Dues in arrears

	1999	2000	2001	2002	Total
Myanmar	1300	1340	1400	1430	5.470
Lebanon	1320	1340	1400	1430	5.490
Pakistan		1110	2800	2860	6.770
Bulgaria			1400	1430	2.830
Russia			14000	14300	28.300
Argentina				4218	4.218
Philippines				4290	4.290
South Korea				2860	2.860
Portugal				2860	2.860
Algeria				1430	1.430
Mozambique				1430	1.430
Turkey				2860	2.860
Total	2620	3790	21000	41398	71.808

4) Members of IUGG in Categories- 2003

Member Country	Category	Member Country	Category
5 countries in	A	12 countries in	2
Armenia		Chile	
Morocco		Czech Republic	
Nigeria	moved to A in 2003	Egypt	
Peru		Hungary	
Serbia and Montenegro	moved to A in 2003	Ireland	
		Korea, South	
1 country in	11	Mexico	
USA		Pakistan	
		Poland	
4 countries in	8	Portugal	
France		Thailand	
Germany		Turkey	
Great Britain			
Japan		21 countries in	1
		Algeria	
4 countries in	6	Bulgaria	
Canada		Colombia	
China		Croatia	
Italy		Estonia	
Russia		Iceland	
		Indonesia	
3 countries in	5	Iran	
Australia		Israel	
India		Jordan	
Spain		Lebanon	
		Luxembourg	
7 countries in	4	Monaco	
Academy Sinica, Taipei		Mozambique	
Argentina		Myanmar	
Belgium		New Zealand	
Denmark		Romania	
Netherlands		Slovak Republic	
Norway		Slovenia	
Sweden		Venezuela	
		Vietnam	
6 countries in	3		
Austria			
Brazil			
Finland			
Philippines			
South Africa			
Switzerland			

5) Countries withdrawn from IUGG in the period 2000-2003

In 2000	Category	In 2001	Category
Bolivia	1	Ex Yugoslavian Rep.	1
Ethiopia	1	Tunisia	1
Guatemala	1	Saudi Arabia	1
Korea, Dem. Rep.	1	Mongolia	1
Sudan	1	In 2002	
Tanzania	1	Albania	1
Uruguay	1	In 2003	
Zimbabwe	1	Malaysia	1
		Greece	3

IUGG income and expense statement for 1996 through 1999

US dollars	1996	1997	1998	1999	4 yr period	Budget
RECEIPTS						
1. Membership Subscription	353,500.00	352,200.00	327,200.00	452,400.00	1,485,300.00	1,486,000.00
2. ICSU Grants				0.00	0.00	
3. Assembly Surcharge		10,400.00		0.00	10,400.00	80,000.00
4. Contracts with ICSU	23,900.00	21,500.00	11,000.00	0.00	56,400.00	124,000.00
5. Sales of Publications	1,600.00	1,800.00	2,100.00	2,200.00	7,700.00	15,000.00
6. Miscellaneous				0.00	0.00	
a. Interest	6,100.00	7,900.00	12,500.00	16,600.00	43,100.00	28,000.00
b. Gain on exchange	100.00		100.00	0.00	200.00	
c. Other				400.00	400.00	
7. Total Receipts	385,200.00	393,800.00	352,900.00	471,600.00	1,603,500.00	1,733,000.00
8. Balance on 1/1	244,300.00	288,400.00	370,200.00	415,300.00		175,000.00
EXPENDITURES						
11. Administration						
11.1 Personnel	18,300.00	16,600.00	16,300.00	16,900.00	68,100.00	105,000.00
11.2 Quarters				0.00	0.00	
11.3 Supplies & Equipment	1,500.00	1,100.00	300.00	4,800.00	7,700.00	16,000.00
11.4 Communications	3,900.00	1,200.00	1,100.00	1,500.00	7,700.00	8,000.00
11.5 Travel, Admin. only	20,100.00	38,800.00	19,100.00	48,600.00	126,600.00	234,000.00
11.6 Miscellaneous				100.00	100.00	
11.7 Travel, representation	900.00	2,900.00	6,600.00	5,200.00	15,600.00	
12. Publications, Printing	12,800.00	11,200.00	10,700.00	15,800.00	50,500.00	54,000.00
13. General Assemblies				0.00	0.00	
13.1 Organization	-1,900.00			2,000.00	100.00	5,000.00
13.2 Travel				103,400.00	103,400.00	30,000.00
14. Symposia	11,000.00	15,500.00	18,000.00	0.00	44,500.00	50,000.00
15. Annual allocations				0.00	0.00	
15.1a Associations	191,900.00	166,400.00	163,300.00	161,600.00	683,200.00	709,000.00
15.1b Inter-Assoc. Science	8,000.00		18,700.00	2,700.00	29,400.00	
15.2 Assembly Surcharges				0.00	0.00	80,000.00
15.3 Contracts with ICSU	30,000.00	15,400.00	11,000.00	41,000.00	97,400.00	124,000.00
16. Dues and Grants				0.00	0.00	
16.1 ICSU and APS	11,200.00	11,700.00	12,200.00	12,700.00	47,800.00	50,000.00
16.2 Inter-Union Science	30,000.00	29,000.00	29,000.00	29,000.00	117,000.00	113,000.00
17. Countries in Need	1,800.00			0.00	1,800.00	28,000.00
18. Miscellaneous				0.00	0.00	
a. Fees	1,500.00	1,400.00	1,400.00	1,300.00	5,600.00	12,000.00
b. Loss on exchange	100.00	800.00	100.00	1,200.00	2,200.00	
19. Total Expenditures	341,100.00	312,000.00	307,800.00	447,800.00	1,408,700.00	1,618,000.00
20. Balance on 31/12	288,400.00	370,200.00	415,300.00	439,100.00		290,000.00

IUGG income and expense statement for 2000 through 2002

US dollars	2000	2001	2002	Total, 3 yr. period
RECEIPTS				
1. Membership Subscription	339,072.12	366,244.04	353,207.30	1,058,523.46
2. ICSU Grants	0.00	0.00	0.00	0.00
3. Assembly Surcharge	18,150.00	0.00	0.00	18,150.00
4. Contracts with ICSU	52,000.00	15,000.00	0.00	67,000.00
5. Sales of Publications	1,521.80	1,884.10	1,571.23	4,977.13
6. Miscellaneous				0.00
a. Interest	24,831.27	20,006.18	7,808.51	52,645.96
b. Gain on exchange	17.66	0.00	3,080.93	3,098.59
c. Other	27,020.57	34,525.50	0.00	61,546.07
7. Total Receipts	462,613.42	437,659.81	365,667.97	1,265,941.20
8. Balance on 1/1	438,900.11	574,556.40	697,381.99	1,710,838.50
EXPENDITURES				
11. Administration				
11.1 Personnel	7,024.10	6,060.10	6,088.00	19,172.20
11.2 Quarters	0.00	0.00	0.00	0.00
11.3 Supplies and Equipment	1,767.35	2,564.78	1,196.94	5,529.07
11.4 Communications	5,663.69	7,648.56	2,918.92	16,231.17
11.5 Travel, Administration only	17,672.72	52,975.46	20,606.79	91,254.97
11.6 Miscellaneous	3,444.31	1,649.73	504.04	5,598.07
11.7 Travel, representation	1,709.16	3,181.75	4,290.79	9,181.70
12. Publications, Printing	7,470.21	6,591.60	3,523.98	17,585.79
13. General Assemblies				0.00
13.1 Organization	8,580.75	0.00	0.00	8,580.75
13.2 Travel	0.00	0.00	0.00	0.00
14. Symposia	17,500.00	12,500.00	14,000.00	44,000.00
15. Annual allocations				0.00
15.1a Associations	167,063.00	121,236.00	260,424.00	548,723.00
15.1b Inter-Association Science	23,700.00	11,700.00	19,700.00	55,100.00
15.2 Assembly Surcharges	0.00	0.00	0.00	0.00
15.3 Contracts with ICSU	11,000.00	10,000.00	5,000.00	26,000.00
16. Dues and Grants				0.00
16.1 ICSU and APS	13,207.00	13,339.00	13,472.00	40,018.00
16.2 Inter-Union Science	34,000.00	34,000.00	34,000.00	102,000.00
17. Countries in Need (Inter-Ass Act.)	6,000.00	29,000.00	40,000.00	75,000.00
18. Miscellaneous				0.00
a. Fees	1,273.48	1,742.72	1,243.15	4,259.35
b. Loss on exchange	0.00	644.53	0.00	644.53
19. Total Expenditures	327,075.78	314,834.22	426,968.61	1,068,878.61
20. Balance on 31/12	574,437.75	697,381.99	636,081.35	

IUGG Budget 2000 - 2003

US dollars	2000	2001	2002	2003
RECEIPTS				
1. Membership Subscription	363,528	370,798	378,213	385,777
2. ICSU Grants	0			
3. Assembly Surcharge	0			
4. Contracts with ICSU	0			
5. Sales of Publications	1,500	1,500	1,500	1,500
6. Miscellaneous				
a. Interest	16,859	18,495	18,400	19,575
b. Gain on exchange	0			
c. Other	0			
7. Total Receipts	381,887	390,793	398,113	406,852
8. Balance on 1/1	421,476	462,363	459,988	489,371
EXPENDITURES				
11. Administration				
11.1 Personnel	20,000	20,600	21,218	21,855
11.2 Quarters				
11.3 Supplies and Equipment	2,000	1,500	1,500	1,500
11.4 Communications	2,500	2,500	2,500	2,500
11.5 Travel, Administration only	38,000	76,000	41,000	71,000
11.6 Miscellaneous				
11.7 Travel, representation				
12. Publications, Printing	12,000	12,300	12,608	12,923
13. General Assemblies				
13.1 Organization				5,000
13.2 Travel				30,000
14. Symposia	15,000	15,000	15,000	5,000
15. Annual allocations				
15.1a Associations	161,800	173,243	169,546	181,052
15.1b Inter-Association Science	19,700	11,700	19,700	11,700
15.2 Assembly Surcharges				
15.3 Contracts with ICSU				
16. Dues and Grants				
16.1 ICSU and APS	13,000	13,325	13,658	14,000
16.2 Inter-Union Science	34,000	34,000	34,000	34,000
17. Countries in Need (Inter-Ass Act.) GA-participation	20,000	30,000	35,000	40,000
18. Miscellaneous	3,000	3,000	3,000	3,000
a. Fees				
b. Loss on exchange				
19. Total Expenditures	341,000	393,168	368,730	473,530
20. Balance on 31/12	462,363	459,988	489,371	422,693

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF GEODESY

The International Association of Geodesy (website <http://www.gfz.ku.dk/~iag>) works to promote the study of all problems of geodesy through geodetic research especially involving international co-operation and activities in developing countries. Until recently it supported seven services: International GPS Service, International Gravimetric Bureau, International Geoid Service, International Center for Earth Tides, International Earth Rotation Service, Permanent Service for Mean Sea Level, and Bureau International des Poids et Mesures. By the end of 2001, however, a charter had been adopted for the new joint International Gravity Field Services, which combines the International Gravimetric Bureau, the International Geoid Service, and the International Center for Earth Tides. A planning group consisting of the section presidents and chaired by the First Vice-President has the task of implementing the new structure. In addition, a new structure for the International Earth Rotation Service started functioning at the beginning of 2001. Its central bureau moved from Paris to Frankfurt am Main in Germany.

The IAG Scientific Assembly was held in Budapest, Hungary, in September 2001. During a council meeting at the Scientific Assembly, new statutes and by-laws were adopted to re-organize IAG from a three-level structure (Executive Committee, sections, and commissions/special commissions/special study groups/services) to two levels (EC and commissions with working groups and services). At its meeting in France in 2002, the Executive Committee discussed and approved a report from the planning group that is preparing the implementation of the new structure. At the Scientific Assembly IAG also organised a meeting of the so-called Spatial Societies (FIG, ISPRS, ICA, IHO, etc.).

During the 1999 General Assembly in Birmingham, the Executive Committee (EC) established new Special Study Groups (SSG) and elected their presidents. It also appointed representatives of IAG to external bodies. At an EC meeting in Como, Italy, working programs of the SSG, Commissions, and Special Commissions were approved. Newly established groups are the Educational Working Group to improve the co-ordination of educational activities (1999) and a Special Study Group on Fractal Geometry in Geodesy (2001). In addition, a new Committee for the Developing Countries has been established. The 4th Geoid School was intentionally placed in Malaysia to attract scientists from developing countries. An account of the 1999 EC administrative meetings was published in the *Geodesists Handbook* in

spring 2000. An interim bi-annual report *Travaux de IAG, 1999-2001*, was published in 2001 and distributed free of charge.

The EC met in Nice, France, in April 2002 to make preparations for the 2003 IUGG/IAG General Assembly and to discuss the establishment of an Inter-commission Committee on Theory. The committee's approval by the Council is expected in 2003. The EC approved formation of a planning group for IGGOS, a new IAG project with G. Beutler (Switzerland) as president. The EC also established a planning group for an inter-commission committee on geodetic standards.

The International Union of Surveying and Mapping, of which IAG had been a member, dissolved in 1999. New ways of facilitating cooperation are being considered.

Considerable effort has been made in the past two years to improve the quality, the fundamental station networks, and the gravity densification in South America, with special emphasis on Argentina, Brazil, Chile, Ecuador, and Paraguay. Important work has been done in the framework of SIRGAS (Sistema de Referencia Geocentrico para Las Americas), which has received financial support from IUGG.

The possibilities for establishing a geodetic reference system for Africa are being investigated on the initiative of IAG Commission X. A preparatory meeting was held in Nice in 2000. An application for the support of a pilot project was submitted to ICSU but was not funded.

Using the so-called IAG Fund, IAG sponsored the participation of several scientists from developing countries at IAG-sponsored meetings, especially at the Scientific Assembly.

IAG's Central Bureau publishes a bi-monthly newsletter, which is printed in the *Journal of Geodesy* and distributed to all national representatives and the members of the IAG Executive Committee. The newsletter provides book reviews and meeting reports and includes a listing of all geodetic publications provided by the IAG Bibliographic Service. It also includes updates to the *Geodesists Handbook*. The Central Bureau updates a database of addresses and maintains the IAG website, which contains detailed information about all meetings and educational activities conducted in the past four years.

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY

IAGA is the premier international scientific association promoting the study of terrestrial and planetary magnetism and space physics. Its five divisions focus on the internal magnetic field, aeronomic phenomena, magnetospheric phenomena, solar wind and interplanetary field, and geomagnetic observatories, surveys, and analyses. See the IAGA website, www.iugg.org/IAGA, for full minutes for past years and detailed information about the many meetings IAGA has sponsored.

The first IAGA Scientific Assembly in Southeast Asia, held jointly with IASPEI, took place 20-31 August 2001 in Hanoi, Vietnam. IAGA sponsored or cosponsored 70 symposia and provided funding at a level greater than for any previous Assembly to support the attendance of young scientists and scientists from the developing world.

A project to produce a unified and consistent magnetic anomaly map of Antarctica, sponsored by IAGA and other organisations, was completed in 2001. Other activities undertaken that year under the auspices of the IAGA Divisions included agreement on a geomagnetic data exchange format, and engagement with the International Organisation for Standardisation (ISO) on requirements for a standard magnetospheric model. The Executive Committee recommends that IAGA should be involved in defining specifications for and in evaluating models, but should not endorse a specific model as a standard. In 2001, a Working Group on Electric and Magnetic Studies of Earthquakes and Volcanoes (EMSEV) was established. IAGA's financial support for the group, which IASPEI and IAVCEI also support, continued into 2003.

IAGA was awarded three ICSU grants during the past 4 years. In 2000 and again in 2002, grants were received in support of INTERMAGNET, an effort to modernise instrumentation and data collection practices in the global magnetic observatory network and to train observatory workers from developing countries. Participation in INTERMAGNET has most recently grown to 75 observatories in 32 countries. In 2003, ICSU awarded a grant

to IAGA to support the project 'Rescue of Old Analogue Magnetograms by Converting to Digital Images.'

IUGG also awards initiative grants for interdisciplinary research. In 2002 and 2003, a project supported by IAGA and IASPEI was funded by IUGG. This initiative is a 'Detailed Study on the Active Tectonics of Afro-Arabian Rift Region Using Palaeomagnetic and Potential Field Data and Its Incorporation with Seismic Activity,' led by Attia Abdelkader El-Sayed.'

Emil Pisara [Slovakia] received an IAGA Long Service Award recognizing his many years of dedicated service at Hurbanovo Observatory, Slovakia. The presentation occurred during a workshop held there in 2000. Nominations for the IAGA Long Service Medal are encouraged, and the establishment of a new IAGA medal is being discussed.

For many years, geomagnetic field modellers working under IAGA's auspices have produced the International Geomagnetic Reference Field (IGRF), a global model of the geomagnetic field and its secular variation. The model coefficients were published in *Physics of the Earth and Planetary Interiors* and in *Geophysical Journal International*.

To improve communication about IAGA activities, the IAGA home page has been redesigned, and, an informational brochure and poster have been published. In 1999, IAGA News No. 30, which focused on the Birmingham General Assembly, was published. In 2000, IAGA Bulletins 32w (Geomagnetic Data for 1993) and 32y (Geomagnetic Data for 1994) were published.

New nominating and election procedures designed to promote diversity in member and discipline participation have been adopted. Dr. Herbert W. Kroehl (USA) served from 1999 to 2001 as IAGA Secretary-General, replacing Dr. Jo Ann Joselyn (USA). Bengt Hultqvist (Sweden) was elected in 2001 as his successor. Dr. B. R. Arora (India) leader of the Interdivisional Commission on Developing Countries, replaced Professor Samuel Ogunade, (Nigeria), who died unexpectedly in 2001, on the Executive Committee.

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF HYDROLOGICAL SCIENCES

The International Association of Hydrological Sciences promotes the study of hydrology as an aspect of the earth sciences and of water resources. IAHS had an especially productive four years. Full minutes for these years, with information about all meetings and workshops held, are shown on IAHS website, <http://www.cig.enscm.fr/~iahs>.

The IAHS Sixth Scientific Assembly was held at Maastricht (The Netherlands) from 18 to 27 July 2001. The overall theme was "A New Hydrology for a Thirsty Planet" and about 400 hundred participants attended. At Maastricht, President-Elect Kuni Takeuchi became President in place of John Rodda, who became Past-President. Reports about the four symposia and seven workshops held at the Assembly can be found on the website.

At the Assembly, it was agreed that the activities of the IAHS should be more closely linked to the major international scientific programmes, with IAHS appearing as an advisor for all hydrological issues. The Assembly approved the admission of IAHS to the IWA/IAHR/IAHS Joint Committee on Hydroinformatics and the creation of an IAHS/IAPSO Joint Commission on Groundwater-Seawater Interactions. The "Maastricht Manifesto," which underlines the important role of hydrological science in solving the world's water problems, was adopted. Two new working groups were launched, as described below.

The Hydrology 2020 Working Group is composed of twelve young hydrologists from all over the world -- nominated by IAHS Commissions, UNESCO, and WMO -- who discuss issues relevant to the development of hydrology in the forthcoming twenty years. This group first met in Edinburgh in January 2002 to define its objectives and working methods. It contributed to the UNESCO/IAHS Kovacs Colloquium in 2002 in Paris held just before the XVth session of the IHP Intergovernmental Council. It will meet in Sapporo and will deliver a provisional report there.

The Prediction of Ungauged Basins (PUB) Working Group, created in Maastricht, is an international research initiative to promote the development of science and technology to provide hydrological data where ground-based observations are needed but missing. PUB consists of theoretical hydrology, remote sensing, in-situ observations, modelling of the quantity and quality of hydrological phenomena, and capacity-building for the people who need advanced science and technology to predict hydrological phenomena for the basins they are concerned with. PUB connects existing programmes inside and outside IAHS and provides a forum, network, and the framework for integration. Two PUB meetings were held in 2002: one in Kofu, Japan, in March, and the second -- the official launching of the IAHS PUB initiative -- in Brasilia in November.

The International Hydrology Prize is given annually in recognition of an outstanding contribution to science and awarded jointly with UNESCO and the WMO. In 2000, the Prize was presented to Uri Shamir (Israel), former IAHS

President and current IUGG Vice President. In 2001, the Prize was awarded to Igor Shiklomanov (Russia). The Tison Award is given annually to a young scientist in recognition of an outstanding contribution to hydrology. The 2000 award was presented to Dr. S. Ulhenbrok (Germany); in 2001 it was presented to Dr. Linda See (UK). There were no awards in 2002, due to lack of nominations.

In 2000, IAHS sponsored about 30 scientific meetings and participated as observer at the XIVth session of the Intergovernmental Council of the UNESCO International Hydrological Program (France, June 2000) and the WMO Commission for Hydrology (Nigeria, November 2000). In 2001, IAHS organized or sponsored about 40 scientific events. IAHS and IUGG were represented at the Kick-Off Meeting (in Kyoto, June 2001) of the 3rd World Water Forum to be held in Kyoto, Shiga, and Osaka, Japan, in March 2003. In 2002, IAHS and its Commissions organized or sponsored more than 50 scientific events. IAHS also participated as observer to the XVth session of the Intergovernmental Council of the UNESCO IHP (France, June 2002) and in the meeting of the WMO-Commission of Hydrology Advisory Working Group in Geneva in December.

In 2000, IAHS Press published six issues of the *Hydrological Science Journal*, which is ranked as the best in this domain, six Red Books, and four issues of the IAHS Newsletter. The newsletter is widely disseminated free of charge, both in hard copy and on the Web. In 2001 IAHS Press published six issues of the *Hydrological Science Journal*, including a special issue, "Can Science and Society Avert the World Water Crisis in the 21st Century," six Red Books, and four issues of the newsletter. In 2002 IAHS Press published six issues of the *Hydrological Science Journal*, plus a special issue, "Towards Integrated Water Resources Management for Sustainable Development"; three issues of the IAHS Newsletter; and six Red Books. The IAHS Task Force for Developing Countries distributes all IAHS publications free of charge to more than 60 universities and research institutions in Africa, Asia, South America, and Eastern Europe. This task has been supported by an ICSU block grant.

IAHS is helping to prepare the next editions of the WMO "Guide to Hydrological Practices" and the UNESCO-WMO "International Glossary of Hydrology."

During the past four years, the IAHS Bureau met three times. At the first meeting, Gordon Young (Canada), elected Secretary General at Birmingham, resigned from his position to take up duties in UNESCO within the World Water Assessment Program. Dr. Pierre Hubert (France) was appointed to take the position until the Sapporo General Assembly. In 2001 the bureau meeting took place in Maastricht (The Netherlands) during the IAHS Scientific Assembly. In 2000 and 2002, the Bureau was held in Paris, between the IHP/IAHS Kovacs Colloquium and the IHP Inter-Governmental Council at UNESCO, as traditionally so for many years.

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF METEOROLOGY AND ATMOSPHERIC SCIENCES

The International Association of Meteorology and Atmospheric Sciences exists to promote the study of the science of the atmosphere and to support international cooperation, presentation of results, and education and public awareness. Detailed information and minutes for past years are shown on the IAMAS website, www.iamas.org.

At our Scientific Assembly in Innsbruck, Austria, in July 2001, there were 840 registrants, and \$45,000 (USD, \$5,000 contributed by WMO) was distributed for 56 travel grants to attendees from developing countries. Scientists younger than 30 registered for free. The highlight was a Symposium presented by Working Group 1 of the Intergovernmental Panel for Climate Change (IPCC). The report included the work of 100-150 atmospheric scientists, mostly IAMAS members.

IAMAS is the IUGG agent for the Alliance for Capacity Transfer (ACT), which is a joint project with the World Meteorological Organization (WMO). IUGG and the University Corporation for Atmospheric Research (UCAR) received a UNESCO grant of \$30,000 from ICSU for 1999. The money was used to assemble proposals to prospective donors and to build up a small Web management group. All IAMAS bodies have endorsed ACT, but input from the developing world is needed to design the different parts of the project.

In 2002, IAMAS and its ten Commissions prepared for upcoming conferences, especially by planning scientific symposia for the IUGG Assembly in Sapporo. The "Special Nakaya-Magono Celebration: The Growth of Ice Crystals and Snow" will honor these two science giants from the University of Hokkaido. The "Sushi Lunch Lecture Series," open to all IUGG2003 attendants, will provide a relaxed learning atmosphere in which listeners can eat sushi or a sandwich, have a pop, and be entertained by top speakers discussing the atmosphere and related geophysical fields.

The Commission for Atmospheric Electricity cosponsored a session at the 34th COSPAR Scientific Assembly in October 2002 on "Changing Middle Atmosphere Electrodynamic Phenomena." The Commission for Polar Meteorology was involved in 2002 in a workshop on an improved database of Antarctic climate data. IAMAS participated in the inaugural meeting of the Commission on Geophysical Risk and Sustainability (GeoRisk) in June 2002 in Budapest.

At the Executive Council Meeting of the World Meteorological Organization in spring 2002, the IAMAS Secretary General noted that the burning of biomass suppresses the rain formation process, especially in developing countries, and urged that the Intergovernmental Panel on Climate Change (IPCC) pay more attention to precipitation, a major unknown in climate models and summer weather forecasting.

IAMAS enjoys strong connections with its scientific community: Immediate Past President Robert Duce is president of the ICSU Scientific Committee on Oceanic Research, and Vice-President M. Geller is vice-president of the Scientific Committee on Solar Terrestrial Physics. Secretary-General R. List co-ordinates IUGG/IAMAS activities with the World Meteorological Organization (WMO), the WMO-ICSU World Climate Research Programme (WCRP) and the International Geosphere-Biosphere Programme.

For the period 1999-2002 IAMAS has provided support exceeding \$110,000 for scientists from developing countries to attend conferences or symposia. That is close to the IUGG's quadrennial contribution to IAMAS. A special tax of \$30 per conference participant and minimal office and meeting expenses provided the funds. At the end of 2002 the balance sheet of IAMAS revealed our best-ever financial situation. Thus, we have adequate funds available to further support attendance at IAMAS meetings by scientists from developing and needy countries.

Our website was upgraded in 2000 via a substantial grant to support the Webmasters Dr. Bettina Bauer (- 2001), and Dr Marc Wueest (from 2001) through the auspices of ETHZ.

The IAMAS statutes were revised in 1999 to create a nomination committee for the Bureau and Executive Committee. This three-member body proposed Professor Huw Davies (Switzerland) as President and Dr. Rit Carbone (USA) and Professor Bob Vincent (Australia) as Vice Presidents. Professor Guoxiong Wu's (China) term as Member at Large was extended for another four years, while Dr. Leonard A. Barrie (Canada), Jean-Louis Fellows (France), Professor Igor Mokhov (Russia), and Professor Akimasa Sumi (Japan) were newly elected.

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION FOR THE PHYSICAL SCIENCES OF THE OCEANS

IAPSO promotes the study of the physical sciences of the oceans and the interactions taking place at the sea floor, coastal, and atmospheric boundaries. IAPSO provides basic services such as the Permanent Service for Mean Sea Level and the IAPSO Standard Seawater Service (operated by Ocean Scientific International) and collaborates closely with UNESCO's Intergovernmental Oceanographic Commission (IOC) and ICSU's Scientific Committee on Oceanic Research.

The IAPSO website: www.iugg.org/iapso is a repository of information about our history, activities, resolutions, Commissions, publications, officers, and more. By late summer 2000, the IAPSO Web site was receiving 5,000 hits per month. In recent updates, abstract books from the 2001 Joint Assembly were added, as well as information for younger students and links to university, laboratory, and institute Web pages. Assembly abstract books are heavily accessed for significant periods of time following the Assemblies.

Our principal meeting for the Quadrennium was the Joint Assembly with the International Association for Biological Oceanography (IABO) in Mar del Plata, Argentina, in 2001. Attending were 430 paid registrants, including a significant number of students and young scientists. A session about IAPSO history was held in addition to technical sessions. At this meeting, Dr. Walter Munk (USA) was the first recipient of the Prince Albert I medal for distinguished accomplishments in the physical sciences of the oceans. The medal is named for the late Prince Albert I of Monaco who, in 1919, organized the Oceanography Section of the International Union of Geodesy and Geophysics. To be awarded biannually, the medal was established in partnership with Prince Rainier of Monaco.

IAPSO Commissions include the Commission on Mean Sea Level and Tides (which operates in cooperation with the Permanent Service on Mean Sea Level), the Commission on Cooperation with Developing Countries, and the Inter-Association Tsunami Commission (jointly sponsored with IASPEI and IAVCEI). The Commission on Sea Ice was discontinued but initial action was undertaken to reform the Commission with a broader scope. The IAPSO Commission on Natural Marine Hazards has been merged with the new Inter-Association Commission on Geophysical Risk and Sustainability, The new IAPSO/IAHS Joint Commission on Groundwater-Seawater Interactions held its organizational meeting in 2001, and its activities have continued. A new Working Group on Deep Ocean Mixing was formed in 2002 by IAPSO and ICSU's Scientific Committee on Oceanic Research. An initial meeting of that group is planned at the IUGG General Assembly in Sapporo.

The IAPSO Executive Committee met twice during the Quadrennium. In addition, a special Task Committee on the future of IAPSO was formed. All National Correspondents received a questionnaire relating to this issue. The Task Force met in Cape Town, South Africa in October 2002, to review input and recommend actions.

Initial planning was carried out for a Joint IAPSO/IABO Scientific Assembly in Perugia, Italy, in September 2005.

IAPSO officers during the past Quadrennium are Dr. Paola Rizzoli, President (USA); Dr. Fred E. Camfield, Secretary General (USA); Dr. L. Vere Shannon, Past President (South Africa); Dr. John A. Johnson (UK) and Prof. S. Krishnaswami (India), Vice Presidents; and Dra. Maria Cintia Piccolo, Deputy Secretary General (Argentina). Members of the Executive committee are M. Astraldi (Italy), K. Le (China), S. Imawaki (Japan), A. Zielinski (Poland), E.G. Morozov (Russia), and D. Smyth-Wright (U.K.).

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF SEISMOLOGY AND PHYSICS OF THE EARTH'S INTERIOR

IASPEI promotes the study of problems relating to earthquakes, the propagation of seismic waves, and the internal structure, properties, and processes of the Earth. Comprehensive minutes of the past Quadrennium and other information are on the IASPEI website, <http://www.iaspei.org/>.

IASPEI and IAGA held a Joint Scientific Assembly at Hanoi, Vietnam, in August 2001. Other organizers were Studies of the Earth's Deep Interior and the International Lithosphere Program. Special symposia focused on the origin and evolution of Earth's natural hazards, structure and dynamics of the lithosphere, and global tectonic zones. More than 1,000 scientists from 64 countries registered. Of 1,700 abstracts submitted, more than 500 were sent to IASPEI or IASPEI-led symposia.

The Asian Seismological Commission (ASC) had two meetings in the past Quadrennium. At the Third General Assembly in Teheran, Iran, in 2000, representatives from most Asian countries and from Africa, Europe, America, and Australia offered the results of their scientific achievements in the field of seismology, earthquake hazard assessment, and topics related to the Earth's interior. An International Regional Training Course on Seismology and Mitigation of Seismic Disasters preceded the assembly. Afterward, two technical workshops -- Educating the Public about Earthquake Hazard and Risk, and Seismic Networks and Site Selection -- were held. ASC's Fourth General Assembly was in Kathmandu in November 2002. About 150 professionals from 22 countries participated. The conference underscored the need to strengthen connections of scientists, earthquake engineers, disaster risk reduction specialists, policy-makers, and administrators to reduce the impact of earthquakes. A Symposium on Seismology, Earthquake Hazard Assessment, and Risk Management followed the ASC meeting. A pilot project, "Seismic Hazard and Risk Assessment in Asia," was adopted at the ASC Fourth General Assembly. The project will focus on improving hazard evaluation, assessing and reducing seismic risk, and early warning and notification. ASC's Fifth General Assembly will be in Armenia in 2004.

With IASPEI's financial support, the European Seismological Commission (ESC) has sponsored four Training Courses for Young Seismologists to expose them to data acquisition, processing techniques, and empirical evaluation of site effects. The 2002 course took place in Genoa and focused on analysis of digital broadband data. Seventeen students from eight countries attended. The ESC Bureau endorsed a proposal to hold a fifth training course in Potsdam in September 2004.

The International Commission for Earth Sciences in Africa (ICESA) facilitates scientific collaboration among African countries and organizations working in the field of earth sciences. The ICESA council's central objective is publication of a book that reviews two decades of research in African geology. Eight special issues of the *Journal of African Earth Sciences* will comprise the book.

The Northern African Seismological Group (NASG) is receiving IASPEI financial support as of October 2002 for its work on seismic hazard assessment in the Afro-Arab region and risk estimation in selected large cities. For each country in Northern Africa, NASG catalogued data that can be used

to compute the seismic hazard for frequencies from 1 to 10 Hz. In December the databases were merged, and a map for the entire area was generated based on the deterministic approach. About 90 NASG scientists met in Algeria in October 2002 and established a link with the IGCP457 UNESCO project.

Another Education/Training Activity was the Workshop/Summer School on Structure and Tectonics of Convergent Plate Margins that was held July 1-6, 2002 at Castle of Zahradky, North Bohemia, Czech Republic. It was organized jointly by the Geophysical Institute of the Academy of Sciences of the Czech Republic (GI) and the Faculty of Mathematics and Physics of the Charles University (FMP) under IASPEI auspices. The workshop/school was aimed at exchange of the latest results of research related to dynamics of active convergent margins, namely to the process of subduction, and at providing MSc and PhD students modern views and summaries on this problem.

The Global Seismic Hazard Assessment Program, part of the United Nations International Decade for Natural Disaster Reduction, ended in 1999 with the completion of the Global Seismic Hazard Map. A special volume of *Annali di Geofisica* contains all reports and the map. All results and ordering instructions are on the web at <http://seismo.ethz.ch/GSHAP/>. The volume and map are available free and will be distributed worldwide.

IASPEI participated in STEND (System for Technology Exchange for Natural Disasters), an information exchange program aimed at increasing awareness of available technology. STEND was developed by the World Meteorological Organization (WMO) in Geneva, Switzerland.

The Working Group on Personal Computers has prepared a PC Shareware Library on diskette that provides fast and wide distribution of geophysical programs and utilities, reduced or demonstration versions of geophysical software, and beta versions of new programs to be included in future volumes of the IASPEI Seismological Software Library (SSL). Each software volume of the SSL includes the executable code, examples on floppy diskettes, and printed documentation.

The Publications Transfer Program of IASPEI's Committee for Developing Countries (CDC) has made material on seismology available to institutions in need in Peru, India, Indonesia, Argentina, and Colombia. Also, the CDC circulated biannually, from Hyderabad, India, a newsletter for geoscientists from developing countries and those in developed countries especially interested in the development of seismology in Third World countries. Both e-mail and print versions were distributed.

The following publications are available from the IASPEI Secretariat. IASPEI on approval distributes free copies of its publications to institutional libraries in less-developed countries.

"IASPEI: Cooperation for Better Understanding of the Earth" (26-page brochure)

International Handbook of Earthquake and Engineering

Seismology (Part A), the first of a two-volume comprehensive review, a state-of-the-art reference for seismologists, earthquake engineers, geologists, and geophysicists. Part A includes two CD-ROMs and 56 chapters detailing the history of seismology, theoretical and observational seismology, earthquake geology and mechanics, and the Earth's structure. Part B, to be published in spring 2003, features 34 chapters detailing strong-motion seismology, selected topics in earthquake engineering, earthquake prediction and hazards mitigation, and miscellaneous topics, including over 50 national reports and 2 CD-ROMs. Each volume has about 1,000 pages. For more information, consult the website, <http://www.academicpress.com/quake>.

New Manual of Seismological Observatory Practice provides the essential scientific and technical fundamentals, reveals

their inter-relationships, and motivates observatory personnel to do their jobs as carefully as possible. Volume 1 comprises 13 chapters. Volume 2 is an annex volume comprising information sheets with a more elaborate treatment of special problems, program descriptions, data sheets, and practical exercises related to basic observatory tasks. First contributions are available on the web, and a print version is also planned. The 1979 *Manual of Seismological Observatory Practice*, is also available on the web (<http://www.seismo.com/>). It covers analogue techniques only.

Finally, IASPEI uses a bulk E-Mail System to broadcast timely announcements about forthcoming meetings and other information of interest to IASPEI members.

QUADRENNIAL REPORT OF THE INTERNATIONAL ASSOCIATION OF VOLCANOLOGY AND CHEMISTRY OF THE EARTH'S INTERIOR

IAVCEI serves as an international focus for (1) research in volcanology, (2) efforts to mitigate volcanic disasters, and (3) research into closely related disciplines, such as igneous geochemistry and petrology, geochronology, volcanogenic mineral deposits, and the physics of the generation and ascent of magmas in the upper mantle and crust. The re-designed IAVCEI website, www.IAVCEI.org, contains updated information on IAVCEI meetings, Commissions, publications, Officers and Sub-Committees, and Awards. The site is frequently updated.

The IAVCEI Scientific Assembly was held in July, 2000, in Bali, Indonesia. About 500 volcanologists attended the five-day meeting and visited some of the world's most famous and destructive volcanoes. Midway through the meeting, participants traveled to Batur caldera and one of VSI's volcano observatories. The next Scientific Assembly is scheduled for November 14-19, 2004, in Pucon, Chile.

In 2001, the highly successful conference "Cities on Volcanoes 2" was held in Auckland, New Zealand. About 250 volcanologists, planners, and industry and government officials attended to discuss aspects of volcanic hazards and their effects in urban areas. A travel grant from IUGG helped pay expenses for ten young scientists or scientists from developing countries. Cities on Volcanoes 3 will be held in Hilo, Hawaii, in July 2003.

A highlight of 2002 was the highly successful conference "Mount Pelee 1902-2002" in St. Pierre, Martinique. About 200 volcanologists attended the meeting May 12-16, 2002. May 8, 2002, was the 100-year anniversary of the famous 1902 eruption that destroyed the city of St. Pierre. At the conference, two outstanding young volcanologists were awarded the IAVCEI Wager Medal: Andy Woods (UK) and James Gardner (USA).

IAVCEI has fifteen active commissions, three of which had leadership changes in 1999. A review process for all commissions was formalized in July 2000 in Bali. The newest commission, Commission of Cities on Volcanoes, is led by David Johnston (NZ) with Diane Tilyard (NZ) as secretary, and a web site has been prepared.

The Commission of Mitigation of Volcanic Disasters has begun a new Atlas series. The first volume will cover the Caribbean region and will be prepared under the leadership of Jan Lindsay (Trinidad). The IAVCEI Executive Committee authorized \$4,000 to support the first volume.

The Commission on Explosive Volcanism is compiling a comprehensive database of all eruptions with volume >10 km³ for the last 2 million years. The Executive Committee authorized \$2,000 to help fund this significant activity.

IAVCEI was co-applicant for an ICSU grant to support training in volcanology for Latin American scientists. The grant provides \$12,000 per year for three years. The first year's funds are being spent to support attendance at a March 2003 workshop in Nicaragua on volcanic gases. Applications are being received for the second year's funds.

Two videos, one on understanding volcanic hazards and the other on reducing volcanic risk, were professionally produced under contract with IAVCEI. More than 310 videos have been sold since 1999. Also sold were more than 21,100 volcano calendars. In addition, each year, IAVCEI distributed 800 calendars to various scientific, educational, and governmental organizations. IAVCEI received a small royalty payment for the calendars.

Tim Druitt (France) is the new editor of IAVCEI's Bulletin of Volcanology. The IAVCEI newsletter "IAVCEI News" is mailed three times every year.

Paid membership for 1999 was 552 members. The top eleven countries in terms of memberships were the USA, Japan, Italy, Australia, U.K., Germany, New Zealand, Russia, Romania, France, and Mexico. IAVCEI ended the year 2000 with 609 paid individual members, another record. For 2001, paid individual membership was 588. At the end of 2002, IAVCEI counted 705 paid individual members, the highest total to date. Twenty-two members chose to become Life Members. The official IAVCEI listserver is now the volcano listserver administered by Arizona State University. It has >2,500 people listed, which far exceeds the IAVCEI membership. Thus we hope to further boost the membership in IAVCEI.

The full IAVCEI Executive Committee met three times during the Quadrennium -- in Bali, Auckland, and Martinique. At Martinique it formed a Nominations Committee, chaired by Wally Johnson (Australia), to certify candidates for the postal vote to be held in spring 2003. Secretary-General Steve McNutt is working with a lawyer to obtain tax-free 501(c)3 status with the Internal Revenue Service of the United States so that contributors to IAVCEI will receive a tax benefit.

Officers are Steve Sparks (UK), President; Joerg Keller (Germany) and Tadahide Ui (Japan), Vice-Presidents; and Steve McNutt (USA), Secretary-General. Members of the Executive Committee are Toshitsugu Fujii (Japan), Bruce Houghton (NZ), Jocelyn McPhie (Australia), Hugo Moreno (Chile), and Raden Sukhar (Indonesia).

REPORT OF THE IUGG COMMISSION ON GEOPHYSICAL RISK AND SUSTAINABILITY

DR. TOM BEER, CHAIR

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

Membership

The Commission held a meeting on July 2003 in Sapporo, Japan, during the IUGG General Assembly. The meeting

ratified the office-bearers, and acknowledged the Association nominees, for 2003-2007 as given in the following list.

Commissioner	Association	e-mail address
Tom Beer	Chair	Tom.Beer@csiro.au
Alik Ismail-Zadeh	Vice-chair	AISMAIL@MITP.RU
Hermann Drewes	IAG	drewes@dfgi.badw.de
Kosuke Heki	IAG	Heki@miz.nao.ac.jp
Susan McLean	IAGA	Susan.Mclean@noaa.gov
Kuni Takeuchi	IAHS & Vice-chair	takeuchi@yamanashi.ac.jp
Gerd Tetzlaff	IAMAS	tetzlaff@rz.uni-leipzig.de
Evgeny Kontar	IAPSO	ekontar@ocean.fsu.edu
Ramesh P. Singh	IAPSO	ramesh@iitk.ac.in
Zhongliang Wu	IASPEI	wuzhl@gscas.ac.cn
Volodya Kossobokov	IASPEI	volodya@mitp.ru
Grant Heiken	IAVCEI & Secretary	tephra@cybermesa.com
Uri Shamir	IUGG	shamir@tx.technion.ac.il
Harsh Gupta	IUGG	harshgupta@nic.in
Paula Dunbar	Treasurer	Paula.Dunbar@noaa.gov
Slava Gusiakov	Tsunami Commission	gvk@omzg.sccc.ru

The Chair (Tom Beer) has indicated a desire to step down so as to concentrate on his role as Vice-President. The Executive Body of the Commission has agreed to nominate Dr Alik Ismael-Zadeh as Chair, and Prof. Ramesh Singh as Vice-chair, and seeks approval from the IUGG Executive Committee for this change.

Publication of Risk Science and Sustainability

The volume “Risk Science and Sustainability (Science for Reduction of Risk and Sustainable Development of Society)” edited by Tom Beer and Alik Ismail-Zadeh was published by Kluwer Academic Publishers as NATO Science Series II (Mathematics, Physics and Chemistry) Volume 112 in August 2003. It consisted of the proceedings of the 2002 Budapest Meeting, and contains the final agreed version of the Budapest Manifesto – that can also be found on the web at www.iugg.org/budapest.pdf

Session at Sapporo

The Commission convened and organised two sessions at the IUGG General Assembly. One of these was an invited session that formed part of the “State of the Planet” theme. Papers from this session are to be published by AGU as a Geophysical Monograph.

Stockholm symposium

The GeoRisk Commission is again combining with EuroScience to arrange a symposium at the EuroScience meeting in Stockholm in August 2004. Professor G. Papadopoulos has been invited to deliver a Rammal Award lecture at the symposium on Risk Science, Society and Sustainability to be held in Stockholm on 26-27 August 2004.

Hazards 2004

Hazards 2004 is the name given to the combined meeting that constitutes the Third Workshop of the IUGG Commission on Geophysical Risk and Sustainability & the Tenth International Symposium on Natural and Human-Induced Hazards of the Natural Hazards Society.

The meeting will be held in Hyderabad, India 2-4 December 2004.

A web page for the meeting has been set up at www.hazards2004.org

Abstract submissions have been extended to 31 August 2004.

Webcyclopedia

The webcyclopedia at:

<http://www.mitp.ru/georisk/webcyclopedia/index.html>

continues to collate information. The presentations given at the Sapporo Assembly are to be incorporated into the webcyclopedia. The commission continues to search for an editor for the project.

ICSU Projects

The commission has been involved with three ICSU initiatives during the past year. These were:

1. Dark Nature Proposal
2. Near Earth Orbit Objects
3. GeoScience Unions Initiatives

Dark Nature Proposal

The GeoRisk Commission supported a proposal by IUGS to study past natural catastrophes led by Prof. Suzanne Leroy of Brunel University. A planning meeting in Paris was attended by Vice-Chair Alik Ismail-Zadeh at which it was believed that agreement was reached for the webcyclopedia to be the publication venue for the results of the project. In subsequent correspondence Prof. Leroy denied any such agreement and has indicated that there is no scope for interaction with IUGG on this project.

Near Earth Orbit Objects

Dr Slava Gusiakov attended a planning meeting on this project. The project was also successful in being funded.

GeoScience Unions Initiatives

The GeoSciences Unions of ICSU (namely IGU, IUGS, IUSS, IUGG) met in Paris in February 2004 and determined five topics for collaborative further action. One of these topics is Hazards, and IUGG agreed to lead action on this topic. The Chair of the GeoRisk Commission has been asked to co-ordinate action on this. It is to be hoped that the

Collaborative Hazards Action Team will meet during the Hyderabad meeting of the Commission.

Congratulations

Congratulations to the Commission Secretary, Grant Heiken, for election as a Fellow of the American Association for the Advancement of Science.

Congratulations to the Commission Chair, Tom Beer, for the award of a Doctor of Science degree from the University of Canterbury.

FINANCIAL STATEMENT

IUGG Georisk Commission Cash Flow Report
 January 1 - December 31, 2003

Paula Dunbar Deposit	-10.00
Wire Transfer	23,378.75
Accountant	-219.50
Bank Charges	-21.00
Kluwer Book Publishing	-2,322.93
Alik Ismail-Zadeh Travel	-2,500.00
Paula Dunbar Travel	-1,276.44
Grant Heiken Travel	-500.00
BALANCE	\$16,548.88

NO LIABILITIES

REPORT OF THE COMMITTEE ON MATHEMATICAL GEOPHYSICS**DAN ROTHMAN****23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

The Committee on Mathematical Geophysics is an Inter-Associations body whose purpose is to promote the development and application of mathematical methods and appropriate theoretical techniques for the solution of geophysical problems across the complete spectrum of IUGG disciplines. In recent years this has led to a focus on nonlinear dynamics. Although the origins of the Committee extend back to 1964, the present structure and pattern of biennial meetings began in 1972 in Canada. Countries that have hosted the meetings since 1986 include the Netherlands, Spain, Israel, Mexico, France, U.S.A., U.K., France, and most recently, Italy in 2002.

The 24th conference of this series was held June 17--21, 2002, in Torino, Italy. The theme of the meeting was "Pattern and Form in Earth Dynamics." The conference

focused on the formation of patterns in a wide range of Earth Systems and emphasized not only their beauty and complexity but also how they could be used to infer important information about the underlying dynamic processes. Examples of pattern-forming systems discussed at the meeting included fracture and fault systems and the distribution of earthquakes, river networks and landform evolution, multi-scale atmospheric systems from clouds to hurricanes, plate formation and mantle convection, the development and consequences of magmatic plumbing systems, and spatio-temporal complexity in ecosystem dynamics. The complete program of the meeting, including a list of participants, is available at the meeting's website <http://www.icg.to.infn.it>.

Plans for our next conference, in 2004, have yet to be finalized.

Officers of the CMG are

Chair:

Vice-Chair– Russia:

Vice-Chair – North America:

Vice-Chair– Europe:

Vice-Chair – Middle East:

Secretary:

Daniel H. Rothman (U.S.A.)

George Molchan (Russia)

Ray Pierrehumbert (U.S.A.)

Antonello Provenzale (Italy)

Eli Tziperman (Israel)

Marc Speigelman (U.S.A.)

Association representatives:

IAG

IAGA

IAHS

IAMAS

IAPSO

IASPEI

IAVCEI

Martin Vermeer (Finland)

to be named

M. Daniel Schertzer (France)

to be named

P. Rizzoli (Italy)

to be named

A. Neri (Italy)

Dan Rothman

CMG President

REPORT OF THE COMMITTEE ON STUDIES OF EARTH'S DEEP INTERIOR

DAVID GUBBINS

23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003

The principal function of SEDI is to facilitate cross-disciplinary research directed at a better understanding of the structure and dynamics of the Earth's deep interior. The definition of what is "deep" is purposely not well established but a broadly used definition is depths below about 400 km. However, SEDI interest can include the shallower zones if processes therein impinge on the deeper regions. Attention is paid to avoiding overlap with the International Lithosphere Programme that addresses the shallower regions. During the past quadrennium, a complete overhaul of the SEDI electronic mailing list and web site was undertaken. The web site was moved to its new address at www.sedigroup.org and the SEDI newsletter, *Deep Earth Dialog*, was revived in electronic form. The Secretary and Chairman began developing a network of national SEDI websites to report on local activities.

SEDI has continued to hold annual symposia. The 7th Symposium was held in Exeter, U.K. from July 30-August 4, 2000. In 2001, the main meeting was the IAGA/IASPEI joint symposium held in Hanoi, Vietnam. SEDI sponsored 7 symposia at the meeting, 4 of them joint between the two Associations and 3 directly with an Association. The 8th biennial SEDI symposium held in Lake Tahoe, California, from 22nd-26th July. It was entitled "Geophysical and Geochemical Evolution of the Deep Earth" and a special issue of *Physics of the Earth and Planetary Interiors*, edited by Michael Bergman and Peter Shearer, was prepared for publication with contributed articles by delegates. At an open meeting, it was decided that the 9th SEDI Symposium would be held in Bavaria, Germany, hosted by Prof Uli Christensen. The meeting was well attended by delegates from many countries and was considered a success by all. Regarding SEDI symposia at the IUGG General Assembly in 2003 in Sapporo, one Union session will be devoted to Deep Earth matters, and SEDI will co-sponsor 8 other relevant symposia.

At Hanoi in 2001, the Chairman signed a memorandum of understanding with Prof. BLN Kennett, President of IASPEI, on procedures for the Doornbos Memorial Prize. This Prize was set up in 1994 following the tragic death of seismologist Durk Doornbos. The fund is managed by IASPEI and the prize awarded for outstanding scientific contributions at the biennial SEDI meeting. The prize winners at the 2000 SEDI meeting were E. Dormy, M. Bergman, and I. Sumita. In 2002, the prizes were awarded to young scientists Dario Alfe of University College, London, Richard Holme of the University of Liverpool, and Stephane Labrosse of the Institute de Physique du Globe, Paris. The prize committee also discussed the possibility of establishing another prize in memory of Dr Stephen Zatman, who died under tragic circumstances during the year. Subsequent discussion with institutions where Stephen has worked have made it clear that a named lecture would be more appropriate, and future SEDI symposia will include an invited Zatman lecture.

In May, 2001, the SEDI secretary, M. Brown, had to resign because of the pressure of work and personal circumstances. Nominations were invited from the SEDI steering committee at the business meeting in Hanoi, and Dr M Bergman of Simon's Rock College, Massachusetts, U.S.A., was elected secretary. The Vice-Chair of SEDI is Henri-Claude Nataf (France).

David Gubbins (U.K.)
Chair

REPORT OF THE WORKING GROUP- GEOPHYSICS: THE FUTURE**23RD GENERAL ASSEMBLY, SAPPORO JAPAN, JUNE 30 – JULY 11, 2003**

The IUGG Executive Committee and Program Committee for Sapporo 2003 met in July 2001, and adopted a proposal by Uri Shamir, IUGG Vice-president, to set up a Working Group titled “Geosciences: The Future” (WG-GTF). The members of the Working Group were young (defined as \leq ~30 years old) scientists representing the seven IUGG Associations. We hope and expect that they will become leaders in their Associations and in the Union. Their task is to develop a vision of the future of the geosciences to be

presented at a Union Symposium of the IUGG General Assembly in 2003.

The Final Report of the Committee on Geophysics: The Future (GTF) will be presented as Union Symposium U8 at the IUGG General Assembly in Sapporo, Japan, on Friday, July 11, 2003. The full report can be found here:
<http://www.iugg.org/geosciences.pdf>

PART II

Statutes and By-laws
of the Union and the Associations

STATUTES OF THE UNION

I. OBJECTIVES AND COMPOSITION OF THE UNION

- 1• The objectives of the International Union of Geodesy and Geophysics are:
 - a) to promote the study of all problems relating to the figure of the Earth, and the physics and chemistry of the Earth's interior, surface, fresh waters, oceans and atmosphere, along with relevant studies of other planets;
 - b) to initiate, facilitate and co-ordinate research into, and investigation of those problems of geodesy and geophysics which require international co-operation or which are of international interest;
 - c) to provide, on an international basis, for discussion and publication of the results of the researches indicated in paragraph b) above;
 - d) to promote co-ordination worldwide of scientific activities in the disciplines of interest to the Union;
 - e) to assist with scientific advice the study of practical problems of a geodetic or geophysical character when such problems present an international aspect or when they require international co-operation of specialists or facilities;
 - f) to promote and co-ordinate the scientific activities of several Permanent Services whose objectives are, on an international basis, to facilitate the standardization of measurements or to collect, analyze and publish geodetic or geophysical data, taking into account the results of planetary studies.
- 2• To achieve its scientific aims, the Union consists of a number of International Associations, each of which deals with a discipline of geodesy or geophysics.
- 3• The Union adheres to the International Council for Science (ICSU).
- 4•
 - a) Any country in which independent activity in geodesy and geophysics has been developed may adhere to the Union, provided that it takes an adequate share in the maintenance of the Union.

That country shall be represented by a single body, known as the Adhering Body, which may be either its principal scientific Academy, or its National Research Council, or any other institution or association of institutions, whether non governmental or governmental, representing the geodetic and geophysical activities of the adhering country. Only under extraordinary circumstances, the Council of IUGG (defined in Item 5 of these statutes) may admit a suitably designated additional Adhering Body for a country, provided a corresponding Adhering Body of that country has already been admitted as a National Member of the International Council for Science. In this case, each Adhering Body will have a separate Council Delegate and will be treated separately in questions of Voting and Finances.

- b) A country in which activity in geodesy and geophysics has been developed but which cannot participate financially in the maintenance of the Union may become Associate. That country shall be represented by a single body, as specified in 4.a.
- c) Hereafter adhering countries will be referred to as Member Countries.

The General Assembly shall consist of the duly accredited Delegates of the Member Countries and guests invited in accordance with the by-laws.

The Council of the Union shall consist of the Delegates known as Council Delegates, designated for each meeting of the Council by the adhering bodies of the Member Countries, one Council Delegate for each Adhering Body. Each Council Delegate shall be formally accredited by the Adhering Body in advance of each meeting of the Council. Adhering bodies in Associate status are not entitled to appoint a Council Delegate.

II. ADMINISTRATION

- 6• Responsibility for the direction of the Union affairs shall be vested in the Council of the Union. Decisions of the Council shall be reported to the General Assembly.
- 7• Between meetings of the Council, the direction of the affairs of the Union shall be vested in the Bureau and the Executive Committee, of which the respective responsibilities are hereafter defined.
- 8• The Bureau of the Union shall consist of the President, Vice-President, Secretary General, Treasurer and three additional Members, all of whom shall be elected by the Council.

The duties of the Bureau shall be to administer the affairs of the Union in accordance with these statutes and by-laws and with the decisions of the Council.
- 9• The Executive Committee shall consist of the Bureau, the Presidents of the International Associations, and the immediate Past President of the Union. The Secretaries of the Associations will be invited to attend any meeting of the Executive Committee of the Union in an advisory capacity.

The duties of the Executive Committee shall be to further the scientific objectives of the Associations through effective co-ordination and through the formulation of general policies to guide the scientific work of the Union.

The Executive Committee shall meet with the Council at sessions of the latter with voice but without vote.

- 10• Within the framework of the statutes of the Union, the International Associations of the Union may make their own statutes and by-laws and control their administration and finance.

III. FINANCE

- 11•** During the meeting of a General Assembly the Council elects a Finance Committee for the next period, comprised of four members:

- two members from among members of the Council
- two members from the previous Finance Committee

If there are insufficient candidates from the previous Finance Committee, then an additional member or members shall be elected from among the members of the Council. No member of the Finance Committee may at the same time be a member of the Bureau or the executive body of the Union or of an Association or of a governing body of one of the permanent services or programs supported by the Union. No member shall serve more than three consecutive periods on the Finance Committee.¹

The Finance Committee shall meet with the Council at sessions of the latter, with voice but without vote.

12•

- a) There shall be twelve categories of membership in the Union, numbered 1 to 12, plus a special category, called A.
- b) For categories 1 to 12, each Member Country shall pay annually the number of units of contribution assigned to the category in which it adheres. In each country the Adhering Body shall be responsible for the payment of the contribution. Any member country may additionally donate contributions for travel support of scientists from countries of category A.
- c) Category A is composed of the Associates. They do not pay an annual contribution to the Union.

13•

- a) A country which seeks to adhere to the Union must specify the category in which it proposes to adhere. Its application for admission may be refused if the category proposed is considered inadequate.

An Associate may enter a paying category, or a paying Member Country may raise its category at any time provided the Council agrees. A paying Member Country may lower its category or become an Associate only with the consent of the Council of the Union.

14•

- a) The financial year shall be the calendar year.
- b) If at the end of any year a paying Member Country has not paid its subscription for that year, the benefits of membership in the Union will be denied to that Member Country until full payment has been made of that year's subscription and of any further subscriptions in arrears. Such Member Countries shall be deemed to be in Observer status.
- c) A Member Country in Observer status will continue to accrue annual subscription obligations.

- d) If at the start of any year a paying Member Country has been in Observer status for four years, that Member Country shall be deemed to have withdrawn from membership unless the Secretary General has received a formal written request from the Member Country for being transferred to Associate membership (category A).
 - e) The Bureau of the Union is authorized to grant requests for transfer temporarily to category A, until the next meeting of the Council, to Member Countries in Observer status that provide evidence that efforts to pay all subscriptions in arrears are likely to be unsuccessful.
 - f) A Member Country which has been denied a transfer to category A by the Bureau may appeal at the next meeting of the Council.
 - g) Any Member Country in Observer status that is denied a transfer to category A shall cease to be a Member Country following the next Council meeting after its request to the Bureau for a transfer.
 - h) Every Associate Membership will be reviewed at each General Assembly. Member Countries which have been Associates from the beginning of their membership, will be asked subsequently to consider entering a paying category.
- 15•** In the event of the dissolution of any Association, its assets shall be ceded to the Union. In the event of the dissolution of the Union, its assets shall be ceded to the International Council for Science (ICSU).

IV. VOTING

- 16•** Associates have no voting rights.

17•

- a) On questions of scientific nature, or of administrative nature, or of a character partly administrative and partly scientific not involving matters of finance, the voting shall be in Council by Member Countries, each Council Delegate having one vote, provided that the subscription of the Adhering Body has been paid up to the end of the calendar year preceding the voting.
 - b) On questions involving finance, the voting shall be in Council by Member Countries with the provision that a voting country must have paid its subscriptions up to the end of the calendar year preceding the voting in Council. The number of votes allotted to each Member Country shall then be equal to the number of its category of membership.
- 18•** Questions on admission of new Member Countries and appeals against denial of transfer to Associate membership shall be decided by a two-thirds absolute majority vote of the Council Delegates meeting in Council, each Council Delegate having one vote.

- 19•** A Council Delegate may represent only one Member Country. No member of the Bureau shall serve as a Council Delegate of a country. No Member of the Executive Committee shall vote with the Council unless under exceptional circumstances he is also the Council Delegate of a Member Country.

¹ The election procedure for the Finance Committee, as outlined above, shall come into effect for the General Assembly of 2007.

A paying Member Country which is not represented at a Council meeting may vote by correspondence on any specific question provided that the matter has been clearly defined on the final agenda distributed in advance to the Member Countries and that the discussion thereon has not produced any new considerations or changed its substance and provided that said vote has been received in writing by the President prior to the voting.

For the validity of the deliberations of the Council, at least one third of the Member Countries eligible to vote must be represented by their Council Delegates.

- 20• Before a vote in a Council meeting, the President shall decide whether the matter under consideration is scientific, administrative or financial in character and whether the procedure of voting by correspondence applies.
- 21• Decisions of the Council shall be taken by a simple absolute majority except as otherwise specified in the present statutes.

If a tie should occur in a Council vote, the decision shall rest with the President.

Simple or two-third absolute majorities are determined by the proportion of affirmative votes to the sum of votes (affirmative, negative, abstention), provided that the total number of delegates voting (affirmative, negative, abstention) is not less than one third of the total membership of the Union eligible to vote. Blank or invalid ballots and votes not cast by Delegates present are counted as abstentions.

V. GENERAL

- 22• These statutes or any further modification to them shall come into force at the close of the Council meeting at which they are adopted.
- 23• The statutes of the Union may not be modified except with the approval of two thirds of the Delegates meeting in Council.
- 24• Proposals by Member Countries for a change of any article of the statutes of the Union must reach the Secretary General at least six months before the announced date of the Council meeting at which it is 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 Council meeting.
- 25• The Council has the power to adopt by-laws within the framework of the statutes of the Union. These by-laws may be modified by a simple majority of votes cast at a Council meeting. These by-laws, or any further modification of them shall come into force at the close of the Council meeting at which they are approved.
- 26• Conduct of meetings, except as otherwise specified in the Statutes, shall be according to Robert's Rules of order.
- 27• The French text of the present Statutes shall be considered the authoritative text.

BY-LAWS OF THE UNION

I. COMPOSITION

- 1• The following are the constituent Associations of the Union:
 - The International Association of Geodesy,
 - The International Association of Seismology and Physics of the Earth's Interior,
 - The International Association of Volcanology and Chemistry of the Earth's Interior,
 - The International Association of Geomagnetism and Aeronomy,
 - The International Association of Meteorology and Atmospheric Sciences,
 - The International Association of Hydrological Sciences,
 - The International Association for the Physical Sciences of the Ocean.

- 2• The Union may, through the Executive Committee, appoint, jointly with other Unions, or jointly between the Associations, or for special purposes, Scientific Commissions which shall themselves have power to create subcommissions as may be necessary. In the same way, it may sponsor Permanent Services. The list of Scientific Commissions or Committees and Permanent Services sponsored by the Union is reviewed by the Executive Committee at each General Assembly.

Scientists from all countries may attend scientific meetings of the Union and of the Associations. They may also act as observers in Commissions of the Union and in the Associations.

- 3• The President shall normally represent the Union at the General Assemblies of the International Council for Science but may be represented, if necessary, by the Vice-President or Secretary General.
- 4• Each Adhering Body shall form a Committee for Geodesy and Geophysics hereafter known as an IUGG National Committee. The function of the National Committee is, under the direction of the Adhering Body, to provide for the participation of the Member Country in the Union activities.

During the interval between General Assemblies, the Bureau of the Union may directly consult by correspondence the National Committee of each Member Country on any question of scientific character or on administrative matters not involving finance. On matters of finance and on admission of new Member Countries, the Bureau of the Union shall communicate with the Adhering Bodies of paying Members.

II. ADMINISTRATION

- 5• General Assemblies shall normally be held once every four years at the call of the President of the Union. The interval of time between the closure of two successive ordinary General Assemblies shall be known as a "period."
- 6• Notice of the date and of the place of the meeting of the next General Assembly shall be sent by the Secretary General to the Member Countries at least nine months before the Assembly.

Proposals concerning agenda for meetings of the Council may be presented by the Adhering Bodies or National Committees ; they must be received by the Secretary General at least six months before the meeting, Associates may make proposals of scientific nature only. The Secretary General must place all proposals received on the final agenda for the Council meeting. This final agenda, with explanatory comments, shall be sent to all Member Countries at least four months prior to the meeting. An item which has not been thus placed on the agenda may be discussed at a meeting of the Council if a proposal to that effect is approved by vote of two-thirds of the Council Delegates.

- 7• The Secretary General may send notice of the date and place of the next General Assembly to individuals or scientific organizations in countries not adhering to the Union, but where there is evidence of activity in Geodesy and Geophysics.

Scientists from these countries will be invited to participate in the scientific program of the General Assembly, with the status of Guest.

The President of the Union may on his own initiative or at the request of an Association or Member Country invite representatives of scientific bodies to attend any General Assembly as Guests provided that there is no financial obligation for the Union.

- 8• A plenary meeting of the participants in the General Assembly shall be held during each General Assembly for discussions of Union activities.
- 9• The Associations shall hold business meetings and scientific sessions at the General Assemblies of the Union.

The scientific meetings at a General Assembly should include joint sessions of two or more Associations for the discussion of interdisciplinary topics. The programme of the meetings and the selection of these interdisciplinary topics shall be decided by the Executive Committee of the Union, about two years before the time of the General Assembly, on the basis of recommendations made earlier by the Associations.

Provided that the Executive Committee is informed, an Association may also arrange meetings of its own in the interval between the General Assemblies, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.

- 10•
 - a) The President of the Union shall be elected for one period and is not immediately eligible for re-election. The Vice-President and the additional elected Members of the Bureau shall be elected for one period and may be re-elected for not more than one consecutive period in the same function.

The Secretary General shall be elected for two periods initially and should not normally be re-elected for more than two additional single periods.

The Treasurer shall be elected for one period initially and should not normally be re-elected for more than two additional single periods.

The Members of the Finance Committee shall be elected for one period and may be re-elected for two successive periods;

- b) At least one year and a half before the General Assembly, the President shall appoint a Nominating Committee with the advice and approval of the Executive Committee. The Nominating Committee shall consist of a Chairman and three other members, not themselves members of the Executive Committee nor the Finance Committee.

The Nominating Committee, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, shall propose one or two candidates for each position in the Bureau, seeking to achieve a reasonable balance in their geographical and professional distribution. Candidates shall be asked to signify their acceptance of nomination and to prepare a resumé outlining their position, research interests and activities related to the Union.

The officers of the Union and Associations and the National Committees shall be informed by the Nominating Committee of the list of nominations at least 8 months before the General Assembly. They may make further nominations and/or recommendations to the Nominating Committee at least 3 months before the General Assembly. If new nominations for a given position are supported by at least 3 Presidents or equivalent officers of National Committees of Member Countries, and if they are accompanied by the written acceptance of possible nomination and resumé outlining the position, research interests and Union related activities of the candidates, they shall be added to the list initially established. The Nominating Committee shall send the final list of nominations to the officers of the Union and Associations and to the National Committees at the latest 2 months prior to the General Assembly.

Re-nominations, from those previously nominated for the Bureau, may also be made over a period of 48 hours, following the close of the first Council meeting at the General Assembly. Such nominations shall be submitted in written form to the Secretary General, supported by at least three members of the Council and accompanied by the same documentation as required with the original nominations. The Council Delegates shall be informed of these additional nominations, together with their resumé, at least 24 hours before the elections.

No one can be a candidate for more than one position in the election. Elections shall be by secret ballot.

- c) The Nominating Committee shall, after soliciting nominations from the Adhering Bodies of the Member Countries, and from the officers of the Union and the Associations, propose a slate of candidates for the Finance Committee: two positions from among the current members of the Finance Committee and two positions from among the accredited Council members at the previous General Assembly.

The officers of the Union and Associations and the National Committees shall be informed by the Nominating

Committee of the list of nominations at least three months before the General Assembly. The Council may add to the list of nominations for the Finance Committee during the General Assembly until 3 days prior to the elections.

Candidates shall be asked to signify their acceptance of nomination and to provide a resumé outlining their suitability for serving on the Finance Committee.

- d) No one shall be at the same time a Member of the Bureau or of the Finance Committee and President or Secretary of an Association.

The Bureau may appoint Assistant Secretaries General and one Assistant Treasurer who may be assigned specific tasks by the Secretary General and the Treasurer with the approval of the Bureau. They may attend meetings of the administrative bodies of the Union in an advisory capacity.

Scientists represented by Adhering Bodies that have Associate membership, or have been in Observer status for two or more years and scientists from countries not represented by an Adhering Body are not eligible to be elected to positions in the Union or in its constituent Associations.

- 11• The Council is convened by the President of the Union, and shall meet at appropriate times during each Assembly.

It may be convened between two General Assemblies when a written request is made by at least a third of the paying Member Countries or by a simple majority of the members of the Executive Committee, with notice of the questions to be placed on the agenda of the meeting; the discussions reached at such a meeting of the Council shall be subject to article 5 of the Statutes.

Council meetings shall be open to Council Delegates, the Executive Committee, and the Finance Committee. One person from each Associate Member may attend any Council meeting, as Listener, without the right to speak. The IUGG President may invite guests to make presentations at Council meetings. Other individuals may, with concurrence of the President, attend Council meetings as Listeners only, except that a simple majority of Council Delegates present may declare part of any meeting closed to Listeners.

The Council shall:

- a) decide upon the admission of new Member Countries;
- b) decide on an appeal against a decision by the Bureau to deny a transfer to Associate membership of a Member Country in Observer Status;
- c) elect the members of the Bureau and of the Finance Committee;
- d) receive reports from the Secretary General and the Treasurer of the Union and ratify the decisions or actions taken by the Bureau and the Executive Committee since the last Council meeting;
- e) consider the budget submitted by the Treasurer and adopt the final budget;
- f) determine the amount of the unit of contribution for the ensuing period (the unit cannot be changed at a General

Assembly unless proposed on the agenda distributed four months in advance to the Member Countries);

- g) review from time to time the categories of Member Countries; review the Associates at each General Assembly;
 - h) examine questions of general policy or administration in the business of the Union and appoint such Committees as may from time to time be deemed necessary for this purpose;
 - i) consider proposals for changes in the Statutes or By-Laws.
- 12•** The Executive Committee is convened by the President of the Union. It shall meet at General Assemblies, and also at all sessions of the Council with voice but without vote. It shall also meet normally at least once between General Assemblies, two years ahead of the next General Assembly, in order to prepare an outline of the interdisciplinary scientific agenda and of the timetables for the Union and for the Associations during the next General Assembly.

At a meeting of the Executive Committee, no member of the Bureau, nor the Past President of the Union, can be represented by any other person. The Presidents of the Associations, in case of hindrance, may be represented by a Vice-President or the Secretary of their Association. The Past President has voice but no vote. For the validity of the deliberations of the Executive Committee, at least half of its members must be present or represented.

Proposals concerning the agenda for meetings of the Executive Committee may be submitted by Members of the Committee; they must be received by the Secretary General at least six months before the meeting.

The final agenda shall be sent to the Members of the Executive Committee at least four months prior to the meeting. No question which has not been placed on the agenda may be discussed at a meeting of the Committee unless a proposal to that effect has been approved by a vote of two thirds of the Members present.

The Executive Committee shall:

- a) initiate actions, as required, to co-ordinate the common interest of the Associations, such as by meetings between the Secretary General and the Secretaries of the Associations;
 - b) guide the Treasurer regarding the financial needs of the Associations in achieving their objectives;
 - c) fill any vacancy which may occur between General Assemblies among the Members of the Bureau and of the Finance Committee (when such appointments are later confirmed by the Council, the period of office will be considered to begin only from the date of its confirmation by the Council);
 - d) make recommendations to the Council on matters of general policy of the Union.
- 13•** The Bureau shall normally meet once a year, at the call of the President of the Union. In a meeting, no Member of the Bureau can be represented by any other person. For

the validity of the deliberations, four Members at least must be present.

Between the meetings of the Council, the Bureau shall initiate procedures to attain the general objectives of the Union; it shall manage the finances, and ensure the adequate administration of the Union. It shall draw up the programmes for the meetings of the Council and of the Executive Committee.

- 14•** Applications for membership of the Union, or for the transfer to Associate membership shall be referred to the Secretary General. The latter shall report thereon to the Executive Committee, which shall decide on the scientific merits of each application. The Secretary General shall then forward the proposals through the appropriate channels to the Adhering Bodies representing the paying Member Countries; these bodies will vote by correspondence and the results of the ballot will be communicated to them by the Bureau. Any admission accepted by a simple majority is provisional until approved by the Council. Simple majority is here determined by the proportion of affirmative votes to the sum of votes (affirmative, negative) provided that this sum is not less than one third of the total membership of the Union eligible to vote. Any case of refusal shall be referred to the Council.
- 15•** The President of the Union shall:
- a) be the representative of the Union in its dealing with National or International Organisations or Institutions;
 - b) convene and preside over the General Assembly and over all meetings of Council, Executive Committee and Bureau;
 - c) submit a report to the General Assembly on the scientific work of the Union during the current period.

In case of his absence, the Vice-President shall act. If the President is incapable of remaining in office, the Vice-President shall become President and the Executive Committee shall elect a new Vice-President from the remaining Members of the Bureau.

16• The Secretary General shall:

- a) serve as Secretary of the General Assembly, the Council, the Executive Committee and the Bureau; arrange for meetings of these bodies; prepare and distribute promptly the agenda and the minutes of all their meetings;
 - b) manage the affairs of the Union, attend to correspondence, preserve the records;
 - c) circulate all information related to the Union;
 - d) prepare reports on the Union's activities; at least three months before the General Assembly, forward to all the Member Countries a report on the administration of the Union since the last General Assembly, and present a summary of this to the General Assembly itself;
 - e) perform such other duties as may be assigned by the Bureau.
- 17•** To assist the Secretary General and the Treasurer in the performance of their duties to the Union, they may be authorized by the Bureau to employ administrative and

secretariat personnel as may be required to ensure orderly administration.

III. FINANCE

18•

- a) The Adhering Bodies to the Union shall pay annually the number of units of contributions assigned to the category in which they adhere, according to the following table:

<i>Category</i>	<i>Units of Contribution</i>
1	1
2	2
3	3
4	5
5	7
6	10
7	15
8	20
9	25
10	30
11	35
12	40

- b) Associates, in category A, do not pay.

- 19• The Finance Committee shall elect a Chair from among its members.

The Finance Committee shall meet, at the call of its Chair, and at least once during its term of office.

The Treasurer may be invited by the Chairman to attend a meeting of the Finance Committee. No Member can be represented by any other person at a meeting of the Committee.

The Finance Committee shall:

- advise the Council on all financial matters of the Union;
- receive and review the audits of the accounts;
- report to the Council;
- advise the Treasurer on preparation of the budget;
- advise the Treasurer, the Bureau, and the Executive Committee on financial matters, including raising funds to support Union and Association activities.

The Chair of the Finance Committee shall normally be invited to meetings of the Bureau or Executive Committee when financial matters are on the agenda.

- 20• The Treasurer of the Union shall be responsible for the financial administration of the Union in accordance with directions issued to him by the Bureau.

The Treasurer shall:

- in consultation with the Executive Committee and the Finance Committee, prepare a preliminary budget to be sent to the Adhering Bodies at least three months prior to the Assembly together with comments of the Finance Committee, then update it at the General Assembly and submit the budget to the Council for approval;
- arrange for an annual audit of the books;

- collect the funds of the Union and disburse them in accordance with the approved budget and instructions of the Council and of the Bureau;

- maintain records of all financial transactions of the Union and submit annual financial reports thereon to the Bureau and the Finance Committee;

- submit such other reports to the Financial Committee and to the Council as may be requested;

- assemble, at the end of the calendar year preceding a General Assembly, the complete accounts of the Union (including those of the Associations and of all Union activities) for the past period, for presentation of his report to the Bureau and to the Finance Committee at least three months prior to the General Assembly, and at the General Assembly to the Council. Such report shall be accompanied by statements concerning each account administered by the Union, its Associations, and other financially assisted bodies. Each account shall be audited by a qualified accountant;

- prepare a summary report of the Finances of the Union (including those of the Associations and of all Union activities) and arrange for the distribution of copies thereof to the Member Countries not later than three months prior to the General Assembly.

The President, the Treasurer and the Assistant Treasurer have the authority to draw from any bank accounts of the Union, but only as directed by the Bureau.

- 21• Travelling expenses and per diem subsistence may be paid by the Treasurer in accordance with rates established by the Bureau.

The following conditions must be satisfied:

- the meeting must be for specific Union business;
- those concerned must represent the Union and not Adhering Bodies;
- those concerned must be unable to obtain adequate allowances from sources in their own country.

STATUTS DE L'UNION

I. OBJECTIFS ET COMPOSITION DE L'UNION

- 1• Les buts de l'Union Géodésique et Géophysique internationale sont les suivants:
 - a) favoriser l'étude de tous les problèmes concernant la figure de la Terre, la physique et la chimie de son intérieur, de sa surface, de l'eau douce, des océans et de l'atmosphère, ainsi que des études pertinentes d'autres planètes.
 - b) initier, faciliter et coordonner les recherches et études de géodésie et de géophysique, qui nécessitent une coopération internationale ou qui présentent un intérêt national.
 - c) assurer, sur le plan international, la discussion et la publication des résultats des recherches mentionnées dans le paragraphe précédent.
 - d) coordonner les moyens d'action scientifique dans le monde entier, dans les disciplines qui intéressent l'Union.
 - e) prêter son concours scientifique à l'étude des problèmes pratiques de nature géodésique ou géophysique, lorsque ces problèmes présentent un aspect international ou lorsqu'ils exigent la coopération internationale de spécialistes ou d'installations.
 - f) promouvoir et coordonner les activités scientifiques de plusieurs services permanents chargés, sur le plan international, de favoriser la normalisation des mesures ou de recueillir, d'analyser et de publier des données géodésiques ou géophysiques en tenant compte des résultats des études planétaires.
- 2• Pour réaliser ses objectifs scientifiques, l'Union regroupe un certain nombre d'Associations internationales, chacune d'elles traitant d'une discipline de la géodésie ou de la géophysique.
- 3• L'Union adhère au Conseil international des unions scientifiques (CIUS).
- 4•
 - a) Tout pays dans lequel une activité géodésique ou géophysique indépendante s'est développée, peut adhérer à l'Union à condition de participer convenablement à son entretien.

Ce pays est représenté par un seul organisme, appelé Organisme adhérent, qui peut être soit la principale Académie scientifique, ou le Conseil national de la recherche scientifique, soit toute autre institution ou groupement d'institutions, gouvernementales ou non, représentant l'ensemble des activités géodésiques et géophysiques du pays adhérent. Le Conseil de l'UGGI (défini à l'article 5 de ces statuts) peut accepter un nouvel Organisme adhérent convenablement désigné pour un pays, uniquement en cas de circonstances exceptionnelles, sous réserve qu'un Organisme adhérent de ce pays ait déjà été admis comme membre national du Conseil international des unions scientifiques. Dans ce cas, chaque Organisme adhérent aura un délégué au Conseil et sera traité à part en matière d'élections ou de finances.

- b) Un pays dans lequel une activité en géodésie et géophysique s'est développée, mais qui ne peut pas participer financièrement à l'entretien de l'Union, peut devenir membre Associé. Ce pays sera représenté par un seul Organisme, comme précisé en 4a.
- c) Dans ce qui suit, les pays adhérents sont appelés Pays membres.
- 5• L'Assemblée générale est constituée des Délégués, dûment accrédités, des Pays membres et des invités, conformément aux règlements.

Le Conseil de l'Union est constitué des Délégués appelés Délégués au Conseil, désignés à chaque réunion du Conseil par les organismes adhérents des Pays membres à raison d'un Délégué au Conseil par Organisme. Chaque Délégué au Conseil est officiellement accrédité par l'Organisme adhérent avant chaque réunion du Conseil. Les organismes adhérents ayant le statut d'Associé ne sont pas admis à nommer un Délégué au Conseil.

II. ADMINISTRATION

- 6• La responsabilité de la direction des affaires de l'Union est dévolue au Conseil de l'Union. Les décisions prises par le Conseil sont présentées à l'Assemblée générale.
- 7• Entre les réunions du Conseil, la direction des affaires de l'Union est dévolue au Bureau et au Comité exécutif, dont les attributions respectives sont définies ci-après.
- 8• Le Bureau de l'Union est constitué par le Président, le Vice-président, le Secrétaire général, le Trésorier et trois membres supplémentaires, tous élus par le Conseil.
- 9• Le Comité exécutif est constitué par le Bureau, les Présidents des Associations internationales, et le Président sortant de l'Union. Les Secrétaires des Associations sont invités à assister, à titre consultatif, à toute réunion du Comité exécutif de l'Union.

Le rôle du Bureau est d'administrer l'Union conformément aux présents statuts et règlements, en accord avec les décisions prises par le Conseil.

Le rôle du Comité exécutif est de faciliter la réalisation des objectifs scientifiques des Associations en assurant leur coordination effective et en exprimant les conditions générales nécessaires à la bonne marche des travaux scientifiques de l'Union.

Le Comité exécutif participe, à titre consultatif, aux séances du Conseil.

- 10• Dans le cadre des statuts de l'Union, les Associations internationales composant l'Union peuvent établir leurs propres statuts et règlements et assurer leur administration ainsi que la gestion de leurs finances.

III. FINANCES

11• Lors de l'Assemblée générale, le Conseil élit, pour la prochaine période, une Commission des finances composée de quatre membres:

- deux membres choisis parmi les membres du conseil
- deux membres issus de la précédente Commission des finances.

S'il n'y pas assez de candidats issus de la précédente Commission des finances, un ou plusieurs membres supplémentaires peuvent être élus parmi les membres du Conseil. Aucun membre de la Commission des finances ne peut être en même temps membre du Bureau ou de l'organisme exécutif de l'Union, d'une association, ou d'un organe directeur de l'un des services permanents ou programmes pris en charge par l'Union. Aucun membre ne peut siéger à la Commission des finances pendant plus de trois périodes consécutives¹.

La Commission des Finances participe, à titre consultatif, aux séances du Conseil.

12•

- a) Les Pays membres de l'Union comptent douze catégories, numérotées de 1 à 12, plus une catégorie spéciale, appelée catégorie A.
- b) Pour les catégories allant de 1 à 12, chaque Pays membre paie annuellement le nombre d'unités de contribution correspondant à sa catégorie. L'Organisme adhérent représentant le pays est responsable du paiement de la cotisation. Tout Pays membre peut en outre verser des fonds destinés à prendre en charge les frais de voyages de scientifiques de pays en Catégorie A.
- c) La catégorie A se compose des membres Associés. Ceux-ci n'acquittent pas de cotisation annuelle à l'Union.

13•

- a) Un pays désireux d'adhérer à l'Union doit spécifier la catégorie à laquelle il se propose d'adhérer. Sa demande d'adhésion peut être refusée si la catégorie choisie est jugée inadéquate.
- b) Un Associé peut devenir membre à titre payant, ou un Pays membre à titre payant peut à tout moment passer dans une catégorie supérieure moyennant l'accord du Conseil. Un Pays membre à titre payant ne peut passer dans une catégorie inférieure ou devenir membre associé qu'avec l'accord du Conseil de l'Union.

14•

- a) L'année financière est l'année civile.
- b) Si en fin d'année, un Pays membre à titre payant n'a pas payé sa cotisation de l'année, il perdra les avantages dont jouissent les membres, jusqu'à réception du paiement intégral de cette année et pour tous les arriérés éventuels de cotisation. De tels Pays membres auront le statut d'Observateur.

- c) Un Pays membre ayant le statut d'Observateur reste redevable des cotisations annuelles échues.
 - d) Si, au début de l'année, un Pays membre à titre payant ayant le statut d'Observateur depuis quatre ans, sera considéré comme démissionnaire de l'Union, à moins que le Secrétaire général n'ait reçu de ce Pays membre une requête écrite en bonne et due forme pour devenir membre associé (Catégorie A).
 - e) Le Bureau de l'Union a l'autorisation d'accorder des demandes de transfert temporaire en Catégorie A, jusqu'à la prochaine réunion du Conseil, aux Pays membres ayant le statut d'Observateur, qui fournissent la preuve que tous les efforts pour payer les cotisations en retard ont peu de chances d'aboutir.
 - f) Un Pays membre à qui le transfert en catégorie A a été refusé par le Bureau, peut faire appel lors de la réunion suivante du Conseil.
 - g) Tout Pays membre sous le statut d'Observateur auquel un transfert en catégorie A est refusé cessera d'être membre après la réunion du Conseil qui fait suite à sa demande de transfert auprès du Bureau.
 - h) Chaque adhésion en tant qu'Associé fera l'objet d'un examen à chaque Assemblée générale. On demande aux Pays membres ayant le statut d'Associé depuis le début de leur adhésion, d'envisager de passer dans une catégorie payante.
- 15•** En cas de dissolution d'une association, ses avoirs seront cédés à l'Union. En cas de dissolution de l'Union, ses avoirs seront cédés au Conseil international des unions scientifiques (CIUS).

IV. DROIT DE VOTE

16• Les Associés n'ont pas le droit de vote.

17•

- a) Pour les questions d'ordre scientifique, ou administratif, ou à la fois d'ordre administratif et scientifique, mais sans incidence financière, le vote se fait au Conseil, par Pays membre, chaque Délégué au Conseil ayant une voix, à condition que l'Organisme adhérent ait payé ses cotisations jusqu'à la fin de l'année civile qui précède le vote.
- b) Pour les questions financières, le vote se fait au Conseil par Pays membre, à condition que le pays votant ait payé ses cotisations jusqu'à la fin de l'année calendaire qui précède le vote. Le nombre de voix attribuées à chaque Pays membre est alors égal au numéro de la catégorie à laquelle ce pays appartient.

18• Pour l'admission de nouveaux Pays membres et les appels relatifs à un refus de transfert au statut d'Associé, les décisions sont prises au Conseil à la majorité absolue des deux tiers des Délégués au Conseil, chaque Délégué au Conseil disposant d'une voix.

19• Un Délégué au Conseil ne peut représenter qu'un seul Pays membre. Aucun membre du Bureau ne peut être Délégué au Conseil d'un Pays membre. Aucun membre du Comité exécutif ne peut participer aux votes du Conseil,

¹ La procédure des élections au Comité des finances, énoncée ci-dessus, doit entrer en vigueur lors de l'Assemblée générale de 2007.

sauf en cas de circonstances exceptionnelles où il serait également le Délégué au Conseil d'un Pays membre.

Un Pays membre à titre payant non représenté à une réunion du Conseil peut voter par correspondance sur toute question particulière, précisée dans l'ordre du jour définitif distribué à l'avance aux Pays membres, pourvu que les débats sur cette question n'aient pas fait apparaître de nouveaux éléments, ni modifié la substance, et que le vote en question soit parvenu au Président avant l'ouverture du scrutin.

Pour la validité des délibérations au Conseil, au moins un tiers des Pays membres ayant le droit de vote sont représentés par leurs Délégués au Conseil.

- 20• Avant un vote lors d'une réunion du Conseil, il revient au Président de décider si la question débattue est d'ordre scientifique, administratif ou financier, et si la procédure du vote par correspondance s'applique.
- 21• Les décisions du Conseil sont prises à la majorité absolue simple sauf dans les cas spécialement mentionnés dans les présents statuts.

Si, au cours d'un vote au Conseil il y a égalité de voix, la décision appartient au Président.

La majorité absolue simple ou des deux tiers est déterminée par la proportion des votes affirmatifs par rapport au total des votes (affirmatifs, négatifs et abstentions) pourvu que le nombre total de délégués votants (affirmatif, négatif, abstention) ne soit pas inférieur à un tiers des Pays membres de l'Union ayant droit de vote. Les votes blancs et nuls et les votes non exprimés par les délégués présents sont comptés comme des abstentions.

V. GÉNÉRALITÉS

- 22• Les présents statuts, ou toute modification ultérieure, prennent effet à la clôture de la réunion du Conseil au cours de laquelle ils ont été adoptés.
- 23• Les statuts de l'Union ne peuvent être modifiés qu'avec l'assentiment des deux tiers des Pays membres réunis en Conseil.
- 24• Les propositions de modification d'un article des statuts de l'Union formulées par un Pays membre, doivent parvenir au Secrétaire général au moins six mois avant la date fixée pour la réunion du Conseil au cours de laquelle elles doivent être examinées. Le Secrétaire général fait connaître à tous les Pays membres, au moins quatre mois avant la date fixée pour la réunion du Conseil, toutes les propositions de modification reçues.
- 25• Dans le cadre des statuts de l'Union, le Conseil peut adopter des règlements qui peuvent être modifiés à la majorité simple des voix exprimées au Conseil. Ces règlements, ou toute modification ultérieure prennent effet à la clôture de la réunion du Conseil au cours de laquelle ils sont approuvés.
- 26• Sauf mention contraire dans les statuts, le déroulement des réunions suit l'ordre des règles de Robert.
- 27• Le texte français des présents Statuts fait autorité.

RÈGLEMENTS DE L'UNION

I. COMPOSITION DE L'UNION

- 1• L'Union est constituée par les Associations suivantes:
 - Association internationale de Géodésie,
 - Association internationale de Sismologie et de Physique de l'Intérieur de la Terre,
 - Association internationale de Volcanologie et de Chimie de l'Intérieur de la Terre,
 - Association internationale de Géomagnétisme et d'Aéronomie,
 - Association internationale de Météorologie et des Sciences de l'Atmosphère,
 - Association internationale des Sciences Hydrologiques,
 - Association internationale des Sciences Physiques de l'Océan.
- 2• L'Union peut, par décision du Comité exécutif, nommer avec d'autres Unions, ou entre les Associations, ou à des fins particulières, des Commissions scientifiques, qui peuvent elles-mêmes former des sous-commission en cas de besoin. De la même manière, l'Union peut parrainer des services permanents. La liste des Commissions ou Comités scientifiques, et Services permanents parrainés par l'Union, est soumise à l'examen du Comité exécutif à chaque Assemblée générale.

Des scientifiques de tout pays peuvent assister aux réunions scientifiques de l'Union et des Associations. Il leur est également possible d'être observateurs dans les Commissions de l'Union et des Associations.

- 3• Le Président représente normalement l'Union aux Assemblées générales du Conseil International des Unions scientifiques. Il peut se faire remplacer par le Vice-président ou le Secrétaire général, si nécessaire.
- 4• Chaque Organisme adhérent constitue un Comité national de Géodésie et de Géophysique, désigné ci-après Comité national UGGI, chargé d'assurer, sous les directives de l'Organisme adhérent, la participation du Pays membre aux activités de l'Union.

Dans l'intervalle entre les Assemblées générales, le Bureau de l'Union peut consulter directement, par correspondance, le Comité national de chaque Pays membre sur toute question d'ordre scientifique ou administratif, sans incidence financière. Pour les questions financières et l'admission de nouveaux Pays membres, le Bureau de l'Union s'adresse aux Organismes adhérents des Pays membres à titre payant.

II. ADMINISTRATION

- 5• Les Assemblées générales se réunissent normalement tous les quatre ans, sur convocation du Président de l'Union. Le terme "période" désigne le temps écoulé entre la clôture de deux Assemblées générales ordinaires consécutives.
- 6• Le Secrétaire général transmettra aux Pays membres, au moins neuf mois à l'avance, notification de la date et du lieu de réunion de la prochaine Assemblée générale.

Toutes les propositions concernant l'ordre du jour des réunions du Conseil peuvent être formulées par les Organismes adhérents ou les Comités nationaux ; elles devront parvenir au Secrétaire général six mois au moins avant la réunion. Les Membres associés ne pourront émettre que des propositions de nature scientifique. Le Secrétaire général inscrira obligatoirement toutes les propositions reçues à l'ordre du jour définitif de la réunion du Conseil. Cet ordre du jour, accompagné d'un exposé des motifs, est envoyé au moins quatre mois avant la réunion à tous les Pays membres. Un article non inscrit à cet ordre du jour pourra être soumis à la discussion du Conseil après un vote favorable du Conseil à la majorité des deux tiers des Délégués au Conseil.

- 7• Le Secrétaire général peut communiquer la date et le lieu de la prochaine Assemblée générale aux personnes ou organisations scientifiques de pays n'adhérant pas à l'Union, qui témoignent d'une activité en Géodésie et en Géophysique.

Des scientifiques de ces pays seront conviés à participer au programme scientifique de l'Assemblée générale en tant qu'invités.

Le Président de l'Union peut, de sa propre initiative ou à la demande d'une Association ou d'un Pays membre, convier des représentants d'organisations scientifiques à participer à toute Assemblée générale en tant qu'invités sous réserve qu'il n'y ait aucune obligation financière pour l'Union.

- 8• Une réunion de travail plénière des participants à l'Assemblée générale se tient pendant chaque Assemblée générale en vue de discuter des activités de l'Union.
- 9• Les Associations tiennent des réunions administratives et des réunions scientifiques pendant les Assemblées générales de l'Union.

Durant une Assemblée générale, les réunions scientifiques devraient comporter des séances conjointes de deux Associations ou davantage, en vue de discuter de sujets interdisciplinaires. Le programme des réunions et le choix des sujets interdisciplinaires sont décidés par le Comité exécutif de l'Union environ deux ans avant la date de l'Assemblée générale, sur la base de recommandations faites antérieurement par les Associations.

Sous réserve que le Comité exécutif en soit informé, une Association peut organiser elle-même des réunions entre les Assemblées générales de l'Union, soit séparément, pour traiter de sujets d'un intérêt particulier, soit en commun avec une autre Association ou plusieurs d'entre elles.

- 10•
 - a) Le Président de l'Union est élu pour une période et n'est pas immédiatement rééligible. Le Vice-président et les autres membres élus du Bureau sont élus pour une période et ne peuvent être réélus qu'une seule fois, pour une période consécutive, avec les mêmes fonctions.

Le Secrétaire général est élu initialement pour deux périodes et ne devrait pas normalement pas être réélu pour plus de deux périodes supplémentaires.

Le Trésorier est élu initialement pour une période et ne devrait pas normalement être réélu pour plus de deux périodes supplémentaires.

Les membres de la Commission des finances sont élus pour une période et peuvent être réélus pour deux périodes successives.

- b) Au moins un an et demi avant l'Assemblée générale, le Président désigne un Comité des candidatures après consultation et approbation du Comité exécutif. Le Comité des candidatures se compose d'un Président et de trois autres membres, n'appartenant ni au Comité exécutif, ni au Comité des Finances.

Le Comité des candidatures, après avoir sollicité des candidatures auprès des Organismes adhérents des Pays membres, et des responsables de l'Union et des Associations, propose un ou deux candidats pour chaque poste à pourvoir au Bureau, en recherchant un juste équilibre dans leur répartition géographique et professionnelle. On demandera aux candidats de manifester leur accord et de préparer un curriculum vitae énonçant les grandes lignes de leur situation, intérêts de recherche et activités concernant l'Union.

Les responsables de l'Union et des Associations et les Comités nationaux sont informés par le Comité des candidatures des candidatures retenues au moins huit mois avant l'Assemblée générale. Ils peuvent soumettre de nouvelles candidatures ou recommandations au Comité des candidatures au moins trois mois avant l'Assemblée générale. Si les nouvelles candidatures à un poste donné sont soutenues par au moins trois Présidents, ou dirigeants équivalents des Comités nationaux de Pays membres, et si elles sont accompagnées du consentement écrit, et du curriculum vitae des candidats décrivant leur situation, leurs intérêts scientifiques, et leurs activités liées à l'Union, ces candidatures seront ajoutées à la liste initialement établie. Le Comité des candidatures enverra la liste finale des candidats aux responsables de l'Union et des Associations et aux Comités nationaux, au plus tard deux mois avant l'Assemblée générale.

Des renouvellement de candidatures, tirées de la liste initiale des candidats pour le Bureau, peuvent aussi se faire durant les 48 heures suivant la clôture de la première réunion du Conseil à l'Assemblée générale. De telles candidatures devront être soumises par écrit au Secrétaire général, soutenues par au moins 3 membres du Conseil et accompagnées des mêmes documents que ceux requis pour une candidature initiale. Les Délégués au Conseil seront informés de ces nouvelles candidatures, accompagnées de leurs curriculum vitae respectifs, au moins 24 heures avant les élections.

Aucun candidat ne pourra postuler à plus d'un poste. Les élections se feront à bulletin secret.

- c) Le Comité des candidatures, après avoir sollicité des candidatures auprès des Organismes adhérents des Pays membres, et des responsables de l'Union et des Associations, propose une liste de candidats pour la Commission des finances : deux postes pour des candidats actuellement membres de la Commission des finances, et

deux postes pour des membres accrédités du Conseil lors de l'Assemblée générale précédente.

Les responsables de l'Union et des Associations et les Comités nationaux sont informés par le Comité des candidatures de la liste des candidatures au moins trois mois avant l'Assemblée générale. Le conseil peut ajouter des noms à la liste de candidats à la Commission de finances avant les trois jours précédant les élections.

Les candidats devront signifier qu'ils acceptent d'être candidats et fournir un curriculum vitae énonçant leurs qualifications pour siéger à la Commission des finances.

- d) Nul ne peut simultanément faire partie du Bureau ou de la Commission des Finances et être Président ou Secrétaire d'une Association.

Le Bureau peut nommer des Secrétaires généraux adjoints et un Trésorier adjoint auxquels des tâches déterminées seront assignées par le Secrétaire général et par le Trésorier avec l'approbation du Bureau. Ils peuvent participer aux réunions des organes administratifs de l'Union à titre consultatif.

Des scientifiques représentés par des Organismes adhérents qui ont le statut d'Associé, ou possèdent le statut d'Observateur depuis deux ans ou plus, et des scientifiques de pays non représentés par un Organisme adhérent, ne peuvent pas être élus et siéger dans l'Union ou les Associations qui la composent.

- 11• Le Conseil est convoqué par le Président de l'Union et se réunit quand il convient, au cours de chaque Assemblée générale.

Il peut être convoqué entre deux Assemblées générales sur demande écrite formulée par le tiers au moins des Pays membres à titre payant, ou une majorité des membres du Comité exécutif, avec indication des questions à mettre à l'ordre du jour de la réunion ; les décisions prises dans ces conditions par le Conseil sont soumises à l'article 5 des Statuts.

Les réunions du Conseil sont ouvertes aux Délégués au Conseil, au Comité exécutif et à la Commission des finances. Un représentant de chaque membre Associé peut assister à n'importe quelle réunion du Conseil en tant qu'Auditeur, sans avoir le droit à la parole. Le président de l'UGGI peut inviter des invités à faire des présentations aux réunions du Conseil. D'autres personnes, peuvent, seulement avec l'accord du Président, assister aux réunions du Conseil en tant qu'Auditeurs, sauf au cas où une majorité simple des Délégués au Conseil présents déclarerait une partie de la réunion interdite aux Auditeurs.

Le Conseil:

- a) se prononce sur l'admission de nouveaux Pays membres;
- b) statue sur un appel à l'encontre d'une décision prise par le Bureau de refuser le transfert en Catégorie Associée d'un Pays membre au statut d'Observateur.
- c) élit les membres du Bureau et de la Commission des Finances;

- d) reçoit les rapports du Secrétaire général et du Trésorier de l'Union et ratifier les décisions ou les mesures prises par le Comité exécutif et par le Bureau depuis la dernière réunion du Conseil;
- e) étudie le budget présenté par le Trésorier et adopte le budget définitif;
- f) détermine le montant de l'unité de contribution pour la période suivante (cette unité ne peut être modifiée lors d'une Assemblée générale à moins d'avoir été inscrite à l'ordre du jour distribué quatre mois auparavant aux Pays membres);
- g) examine de temps en temps les catégories des Pays membres; examine la situation des membres Associés à chaque Assemblée générale.
- h) étudie les questions de politique générale ou l'administration des affaires de l'Union et désigne éventuellement les Comités qui peuvent être jugés nécessaires à cette fin;
- i) étudie les propositions de modification des statuts ou règlements.

12• Le Comité exécutif est convoqué par le Président de l'Union. Il se réunit au cours des Assemblées générales et participe, à titre consultatif seulement, à toutes les délibérations du Conseil. En principe, il se réunit également au moins une fois au cours de chaque période deux ans entre les Assemblées générales, pour établir un projet d'ordre du jour pour les activités scientifiques interdisciplinaires et un projet d'emploi du temps de l'Union et des Associations pendant l'Assemblée générale suivante.

Lors d'une réunion du Comité exécutif, aucun membre du Bureau, ni le Président sortant de l'Union ne peuvent se faire représenter par quiconque. Les Présidents des Associations peuvent, en cas d'empêchement, être représentés par un Vice-président ou le Secrétaire de leur Association. Le Président sortant a le droit de parole, sans droit de vote. Pour la validité des délibérations du Comité exécutif, la moitié au moins de ses membres doit être présente ou représentée.

Les propositions concernant l'ordre du jour des réunions du Comité exécutif peuvent être formulées par les membres du Comité ; elles devront parvenir au Secrétaire général au moins six mois avant la réunion.

L'ordre du jour définitif devra être envoyé aux membres du Comité exécutif quatre mois au moins avant la réunion. Une question non inscrite à cet ordre du jour ne pourra être soumise à la discussion du Comité exécutif qu'après un vote favorable du Comité, obtenu à la majorité des deux tiers des membres présents à la réunion.

Le Comité exécutif:

- a) prend les mesures nécessaires à la coordination des intérêts communs des Associations, telles que les réunions entre le Secrétaire général et les Secrétaires des Associations;
- b) conseille le Trésorier au sujet des besoins financiers des différentes Associations pour réaliser leurs objectifs;

- c) comble toute vacance qui pourrait survenir entre les Assemblées générales parmi les membres du Bureau ou de la Commission des finances (lorsque de telles nominations sont confirmées ultérieurement par le Conseil, la période d'exercice sera présumée commencer le jour de cette confirmation seulement);
- d) fait des recommandations au Conseil sur les questions de politique générale de l'Union.

13• Le Bureau se réunit en principe une fois par an sur convocation du Président de l'Union. Lors d'une réunion, aucun membre du Bureau ne peut se faire représenter par quiconque. Pour la validité des délibérations, quatre membres au moins doivent être présents.

Entre les réunions du Conseil, le Bureau initie les procédures nécessaires pour réaliser les objectifs généraux de l'Union ; il gère les finances et assure l'administration de l'Union. Il prépare les programmes des réunions du Conseil et du Comité exécutif.

14• Les demandes d'adhésion à l'Union ou de transfert en Catégorie Associée sont présentées au Secrétaire général. Ce dernier présente un rapport à leur sujet au Comité exécutif qui juge du bien-fondé, sur le plan scientifique, de chaque demande. Il transmet alors la demande, par les voies les plus appropriées, aux Organismes adhérents représentant les Pays membres à titre payant ; ces Organismes votent par correspondance et le résultat du scrutin leur est communiqué par le Bureau. Toute admission acceptée à la majorité simple reste provisoire jusqu'à approbation par le Conseil. La majorité simple est ici déterminée par la proportion des votes affirmatifs par rapport au total des votes (affirmatifs, négatifs) sous réserve que ce total ne soit pas inférieur au tiers des Pays membres de l'Union ayant le droit de vote. Tout refus est déferé au Conseil.

15• Le Président:

- a) représente l'Union dans ses relations avec les institutions et les organisations internationales ou nationales;
- b) convoque et préside l'Assemblée générale ainsi que les réunions du Conseil, du Comité exécutif et du Bureau;
- c) présente à l'Assemblée générale le rapport sur les activités scientifiques de l'Union pendant la période en cours;

En l'absence du Président, le Vice-président le remplace. Si le Président est dans l'incapacité de terminer son mandat, le Vice-président devient alors Président et le Comité exécutif élit un nouveau Vice-président parmi les membres restants du Bureau.

16• Le Secrétaire général:

- a) remplit les fonctions de Secrétaire de l'Assemblée générale, du Conseil, du Comité exécutif et du Bureau ; organise les réunions de ces organismes ; établit et diffuse promptement les ordres du jour et les procès-verbaux de toutes leurs réunions;
- b) gère les affaires de l'Union, se charge de la correspondance et assure la conservation des archives;
- c) distribue toutes les informations relatives à l'Union;

- d) établit les rapports d'activité de l'Union ; envoie notamment à tous les Pays membres, trois mois au plus tard avant chaque Assemblée générale, un rapport sur l'Administration de l'Union depuis l'Assemblée générale précédente, et en présente un résumé à l'Assemblée générale elle-même;
- e) accomplit toutes autres fonctions que pourrait lui confier le Bureau.
- 17• Pour aider le Secrétaire général et le Trésorier dans l'accomplissement de leurs tâches, le Bureau peut les autoriser à engager le personnel administratif et le personnel de Secrétariat nécessaires au bon fonctionnement de l'Union.

III. FINANCES

18•

- a) Les pays adhérents à l'Union paient annuellement le nombre d'unités de contribution correspondant à leur catégorie de membre selon le tableau suivant :

<i>Catégorie</i>	<i>Unités de contributions</i>
1	1
2	2
3	3
4	5
5	7
6	10
7	15
8	20
9	25
10	30
11	35
12	40

- b) Les membres Associés, en Catégorie A n'acquittent pas de cotisation.
- 19• La Commission des Finances élit un Président choisi parmi ses membres.

La Commission des Finances se réunit sur convocation de son Président, au moins une fois au cours de l'exercice de son mandat.

Le Trésorier peut être invité par le Président à assister à une réunion de la Commission des finances. Aucun membre ne peut être représenté par un tiers à une réunion de la Commission.

La Commission des Finances:

- a) donne son avis au Conseil sur tout ce qui à trait aux questions financières de l'Union;
- b) réceptionne et examine les audits des comptes;
- c) rend compte au Conseil;
- d) donne son avis au Trésorier sur la préparation du budget;
- e) donne son avis au Trésorier, au Bureau et au Comité exécutif sur les questions financières, y compris la collecte des fonds pour soutenir les activités de l'Union et des Associations;

Le Président de la Commission des finances est généralement invité aux réunions du Bureau ou du Comité exécutif quand des questions financières figurent à l'ordre du jour.

- 20• Le Trésorier de l'Union est responsable de l'administration des finances de l'Union, conformément aux directives qui lui sont données par le Bureau.

Le Trésorier:

- a) prépare, en collaboration avec le Comité exécutif et la Commission des finances, un budget préliminaire accompagné des commentaires de la Commission des finances, qui sera envoyé au moins trois mois avant l'Assemblée aux Organismes adhérents, puis le met à jour à l'Assemblée générale, et le soumet à l'approbation du Conseil;
- b) prend des dispositions pour un audit annuel des comptes;
- c) réunit les fonds de l'Union et les répartit conformément aux instructions du Conseil et du Bureau;
- d) tient les comptes de toutes les transactions financières de l'Union et présente tous les ans les rapports financiers qui en découlent au Bureau et à la Commission des finances;
- e) présente à la Commission des Finances et au Conseil tout autre rapport qui lui serait réclamé;
- f) rassemble, à la fin de l'année qui précède l'Assemblée générale, les comptes complets de l'Union (y compris ceux des Associations et de toutes les activités de l'Union) pour la période écoulée, afin de présenter son rapport au Bureau et à la Commission des Finances trois mois au moins avant l'Assemblée générale, puis, lors de l'Assemblée générale, au Conseil. Ce rapport doit être accompagné d'états relatifs à chacun des comptes gérés par l'Union, ses Associations et autres Organismes bénéficiant de l'aide financière de l'Union. Chaque compte devra être certifié par un comptable qualifié;
- g) prépare un bref rapport sur les finances de l'Union (y compris celles des Associations et de toutes les activités de l'Union) et en assure la diffusion aux Pays membres trois mois au plus tard avant chaque Assemblée générale.

Le Président, le Trésorier et le Trésorier adjoint sont autorisés à retirer des fonds de tous les comptes bancaires de l'Union, mais seulement selon les instructions du Bureau.

- 21• Les frais de voyage et de séjour, peuvent être payés par le Trésorier aux tarifs établis par le Bureau.

Les conditions suivantes doivent être remplies:

- a) les réunions concernent spécifiquement les activités de l'Union;
- b) les personnes concernées doivent représenter l'Union et non un Organisme adhérent;
- c) les personnes concernées ne peuvent pas obtenir d'allocations suffisantes de leur pays d'origine.

**STATUTES & BY-LAWS OF THE
INTERNATIONAL ASSOCIATION OF GEODESY**
(As adopted at the Extraordinary Meeting of the Council, Sept. 8, 2001)

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1. The International Association of Geodesy, hereafter called the Association or the IAG, is a constituent Association of the International Union of Geodesy and Geophysics, hereafter called the Union or IUGG, and is subject to the Statutes and Bylaws of the Union as well as to these Statutes.
2. The MISSION of the Association is the advancement of geodesy, an earth science that includes the study of the planets and their satellites. The IAG implements its mission by advancing geodetic theory through research and teaching, by collecting, analyzing, and modeling observational data, by stimulating technological development and by providing a consistent representation of the figure, rotation, and gravity field of the earth and planets and their temporal variations.
3. The IAG shall pursue the following OBJECTIVES to achieve its mission:
 - a. Study, at the highest possible level of accuracy, all geodetic problems related to the following:
 - Definition, establishment, and maintenance of global and regional reference systems for interdisciplinary use.
 - Rotation of the Earth and Planets.
 - Positioning and deformation studies.
 - Gravity field determination.
 - Ocean and sea level.
 - Time transfer.
 - Signal propagation through the planets' atmospheres.
 - b. Support the maintenance of geodetic reference systems for continuous, long-term observations and archival of results.
 - c. Provide observational and processed data, standards, methodologies, and models in a form that ensures the broadest possible range of research and application.
 - d. Stimulate development and take advantage of emerging space and other technologies to increase the resolution and accuracy of geodetic data and products in order to advance geodetic and interdisciplinary research.
 - e. Initiate, coordinate, and promote international cooperation and knowledge exchange through symposia, workshops, summer schools, training courses, publications, and other means of communication.
 - f. Foster the development of geodetic activities and infrastructure in all regions of the world, taking into consideration the specific situation of developing countries.
 - g. Collaborate with the international science and engineering community in supporting the application of geodetic theory and techniques and the interpretation of results.
 - h. Cooperate with national and international agencies in establishing research goals, missions, and projects.

4. The Association's STRUCTURE shall comprise of a small number of components: Commissions, Services, IAG Projects and a Communication and Outreach Branch. Sub-components, such as Sub-commissions, Commission Projects, Inter-commission Committees, and Study Groups may be formed as provided for in the Bylaws.
5. The ADMINISTRATION of the IAG comprises of the General Assembly, the Council, the Bureau and the Executive Committee.
- 5.1 The MEMBERSHIP of the IAG shall comprise of countries and individuals.
- Any member country of the IUGG shall be regarded as a National Member of the IAG and may, through its adhering body, appoint a National Delegate to the Association. National Delegates represent their countries in IAG Council meetings and act as correspondents for their countries between General Assemblies.
- Individual scientists may become Members, Candidate members, or Fellows as provided for in the Bylaws.
- 5.2 The IAG GENERAL ASSEMBLY shall consist of the Fellows, Members, and Candidate Members.
- 5.3 Responsibility for the direction of the Association affairs shall be vested in the COUNCIL. Decisions of the Council shall be reported to the General Assembly. In the case that the majority of those present at a General Assembly meeting disagree with the decisions of the Council, the Council shall reconsider the question, and make a decision, which shall be final.
- 5.3.1 The COUNCIL CONSISTS of the National Delegates, formally accredited by the adhering body of the member countries, on the basis of one delegate per country. The delegates must have participated in IAG activities. The President of the Association shall preside over the Council meetings, without vote, except in the case of a tie as provided in Article 5.3.2 f) hereafter.
- 5.3.2 VOTING IN THE COUNCIL shall follow the following rules:
- Each National Delegate may represent only one member country. A member country which is not represented at a Council meeting may vote by correspondence on any specific question, provided that the matter has been clearly defined on the final agenda distributed in advance, and that the discussion thereon has not produced any significant new considerations or change in its substance, and that the said vote has been received by the President prior to the voting.
 - In order that the deliberations of the Council shall be valid, the number of National Delegates present must be at least half of the member countries represented at the General Assembly of the IUGG. If the meeting is not held at the same time as an IUGG General Assembly, the number present at the most recent IUGG General Assembly is used.
 - On questions not involving matters of finance, the voting in Council shall be by member countries, each having one vote, provided that its IUGG subscriptions shall have been paid up to the end of the calendar year preceding the voting.
- d) On questions involving finance, the voting in Council shall be by member countries, with the same provision that a voting country shall have paid its IUGG subscriptions up to the end of the calendar year preceding the voting in Council. The number of votes allotted to each member country shall then be equal to the number of its category of membership as defined by the IUGG.
- e) Before a vote in a Council meeting, the President shall decide whether or not the matter under consideration is financial in character and whether the procedure of voting by correspondence applies.
- f) Decisions of the Council shall be taken by a simple majority, except as otherwise specified in these Statutes. If a tie should occur in a Council vote, the President shall cast the decisive vote. Simple and two-thirds majorities are determined by the proportion of affirmative votes to the sum of all votes (affirmative, negative and abstention). Blank and invalid ballots and votes not cast by delegates present are counted as abstentions.
- g) Except as otherwise provided in the Statutes or Bylaws, meetings of the Council as well as those of other IAG administrative bodies shall be conducted according to Robert's Rules of Order.
- 5.4 Between meetings of the Council, the direction of the affairs of the Association shall be vested in the BUREAU and the EXECUTIVE COMMITTEE, the respective composition and responsibilities of which are defined hereafter.
- 5.4.1 The Bureau of the Association shall consist of the President, the Vice-President, and the Secretary General, all of whom shall be elected by the Council. The duties of the Bureau shall be to administer the affairs of the Association in accordance with these Statutes and Bylaws and with the decisions of the Council and the Executive Committee. No member of the Bureau of the Association shall serve as a delegate of a country.
- 5.4.2 The Executive Committee shall consist of the Bureau, the immediate Past President, the Presidents of the Commissions, three representatives of the Services, the President of the Communication and Outreach Branch, and two Members-at-Large to improve geographical and organizational balance.
- Presidents of the Inter-commission Committees, Chairs of the IAG Projects and the Assistant Secretaries shall attend any meeting of the Executive Committee, with voice but without vote.
- The Past Presidents and past Secretary Generals may attend any meeting of the executive committee, with voice but without vote.
- The duties of the Executive Committee shall be to further the objectives of the Association through effective coordination and through the formulation of general policies.
- The members of the Executive Committee shall attend meetings of the Council, with voice but without vote.

6. CHANGES IN THE STATUTES AND BYLAWS
shall be made as follows.

6.1 The Association shall review the Statutes and Bylaws to ensure an up-to-date structure of its scientific organization every eight years. To achieve this goal a Review Committee will be appointed by the Executive Committee at its first meeting after the General Assembly in periods where a review must be performed. Proposals for a change of any article of these Statutes must reach the Secretary General at least six months before the announced date of the Council meeting at which it is 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 Council meeting.

6.2 The Statutes may not be modified except by the approval of a two-thirds majority of votes cast at a Council meeting, and shall come into force at the close of the meeting.

6.3 The Council shall have the power to adopt Bylaws within the framework of the Statutes.

The Bylaws may be modified by a simple majority of votes cast at a Council meeting, and shall come into force at the close of the meeting.

7. In the event of the DISSOLUTION OF THE ASSOCIATION, its assets shall be ceded to the IUGG.

IAG BY-LAWS

1. The scientific work of the Association is performed within a component-STRUCTURE consisting of Commissions, Services, the Communication and Outreach Branch, and IAG Projects, hereafter called the Association-components or components. The Council decides the respective responsibilities of these components on recommendation of the Executive Committee. Because of the complex inter-relations among various activities of the Association, interaction between the individual components is implied.

The list of all components and sub-components shall be published in the Geodesist's Handbook after each General Assembly.

The Association may also participate in joint bodies of the IUGG and other scientific organizations, especially those belonging to the International Council for Science (ICSU). These bodies shall be administered according to their specific rules. Their relationship with the Association will be placed under the responsibility of either the IAG Executive Committee or a specific Association component, and handled by the IAG representatives.

1.1 The components are led by Component Steering Committees under the leadership of presidents/chairs. Their RESPONSIBILITIES shall be as follows:

The Component Presidents are responsible for the scientific development within the interest of the component. They shall coordinate the work of the bodies assigned to the component (sub-components), and keep the officers of the component as well as the Bureau informed of the component's activities, on an annual basis. Sub-components are treated later in the Bylaws.

The reports of the sub-components (if any) should reach the President of the relevant component two months before each General Assembly, if not otherwise stated. These reports and the reports of the components are published in the "Travaux de l'Association Internationale de Géodésie".

The President shall receive suggestions for new sub-components, and suggestions for continuation of existing ones, shall coordinate them and transmit recommendations to the IAG Executive Committee.

The Component Steering Committee shall meet at least once per year and at least once during each General Assembly. At the General Assembly, at the IAG Scientific meeting or on some other appropriate occasion, the Committee shall review the activities of the bodies assigned to the component over the past period, and for those which will be recommended for continuation, review their programs for the forthcoming period. The constitution of the Component Steering Committees is described later in the Bylaws.

The Central Bureau should receive copies of all relevant correspondence of components and sub-components of the Association.

Components as well as the sub-components are free to hold scientific meetings. Scientific symposia are subject to the approval procedure of the IAG Executive Committee. A scientific symposium has to be sponsored by one or more component or sub-component.

1.2 COMMISSIONS shall promote the advancement of science, technology and international cooperation in their field. They establish the necessary links with sister disciplines and with the relevant Services. Commissions shall represent the Association in all scientific domains related to their field of geodesy.

The Commissions are one of the main components of the IAG structure. In addition to their main tasks they are also responsible for their sub-components: the Sub-commissions, Commission-Projects, Study-Groups, and Joint Sub-components.

1.2.1 There are at present four COMMISSIONS which are listed below with their main topics/tasks indicated:

Commission 1. Reference Frames

a. Establishment, maintenance, improvement of the geodetic reference frames.

- b. Advanced terrestrial and space observation technique development for the above purposes.
- c. International collaboration for the definition and deployment of networks of terrestrially-based space geodetic observatories.
- d. Theory and coordination of astrometric observation for reference frame purposes.
- e. Collaboration with space geodesy/reference frame related international services, agencies and organizations.

Commission 2. Gravity Field

- a. Terrestrial, marine, and airborne gravimetry.
- b. Satellite gravity field observations.
- c. Gravity field modeling.
- d. Time-variable gravity field.
- e. Geoid determination.
- f. Satellite orbit modeling and determination.

Commission 3. Earth Rotation and Geodynamics

- a. Earth Orientation (Earth rotation, polar motion, nutation and precession).
- b. Earth tides.
- c. Tectonics and Crustal Deformation.
- d. Sea surface topography and sea level changes.
- e. Planetary and lunar dynamics.
- f. Effects of the Earth's fluid layers (e.g., post glacial rebound, loading).

Commission 4. Positioning and Applications.

- a. Terrestrial and satellite-based positioning systems development, including sensor and information fusion.
- b. Navigation and guidance of platforms.
- c. Interferometric laser and radar applications (e.g., Synthetic Aperture Radar).
- d. Applications of geodetic positioning using three-dimensional geodetic networks (passive and active networks), including monitoring of deformations.
- e. Applications of geodesy to engineering.
- f. Atmospheric investigations using space geodetic techniques.

Each Commission shall have a Steering Committee, with a maximum of twelve voting members, which shall define the appropriate sub-structure of the Commission, which may consist of the following components:

- a. Sub-commissions.
- b. Study Groups.
- c. Commission Projects.

Sub-commissions and Commission Projects are long-term components, Study Groups are of a short-term nature (maximum of four years). The IAG Executive Committee shall approve the structure and changes to the structure of the Commission.

The Commission Steering Committee shall be set up at each General Assembly, following the election of the Association officers. It shall be composed of the following membership:

- a. President elected by the Council.
- b. Vice-president appointed by the IAG Executive Committee.
- c. Chairs of the long-term components.

- d. Up to three representatives of the Services relevant to the work of the Commission.
- e. Up to two Members-at-Large to balance geographical and member country representation.

Commission Presidents and Vice-presidents shall serve in general for one four-year period. Re-elections are possible in exceptional cases. The representatives of the services are appointed by the services.

The Commission President and Vice-president appoint the Members-at-Large and the chairs of the long-term components within two months following the General Assembly. The IAG Executive Committee shall approve the appointments. Members-at-Large are appointed for a four-year period without reappointment.

The Commission Steering Committee is responsible for maintaining IAG activities in its domain, between and at the General Assemblies. This includes the following:

- a. Review the Commission's field of interests and objectives.
- b. Liaison with the other IAG commissions, the Inter-commission Committees, and with similar organizations outside the IAG, as appropriate.
- c. Foster active participation of young geodesists and geodesists from under-represented countries.
- d. Coordinate and review the work of its components and report at the time of the Scientific Assembly to the Executive Committee on the progress and performance of the components.
- e. Organize Commission and interdisciplinary symposia and/or sessions at major geodesy related international meetings.
- f. Maintain a commission web page and e-mail service.
- g. Nominate up to three editors for the Journal of Geodesy.

The Commission Steering Committee shall meet at least once per year.

1.2.2 SUB-COMMISSIONS deal with long-term issues/topics in the field of the Commission. They are established for long time periods (typically several four-year cycles). The Commission Steering Committee before each General Assembly shall regularly review their work and the need for their continuation.

A Sub-commission shall be set up for topics where the Commission claims to play a leading or coordinating role. Each Commission shall contain a reasonably small number of Sub-commissions.

Guidelines for the establishment of Sub-commissions are established by the Executive Committee and published in the Geodesist's Handbook.

1.2.3 COMMISSION PROJECTS may be established when a new scientific method or a new technique is being developed, or when it seems appropriate to apply an existing technique to a specific geographic area where international collaboration is required.

Commissions shall establish only a reasonably small number of Commission Projects. They should be viewed as flagships for the Commission.

The Commission Project is initially established for four years, and it may be extended for another four-year period, subject to a successful review.

Commission Projects are established and terminated by the IAG Executive Committee upon recommendation from the Commission.

Guidelines for the establishment of Commission Projects are established by the Executive Committee and published in the Geodesist's Handbook.

1.2.4 STUDY-GROUPS address clearly defined well-focused scientific topics of limited scope within the field of the Commission over a limited time period of maximum four years.

Study Groups may be set up at any time by the Commission Steering Committee upon recommendation of one or more members or by individual scientists at one of the committee's regular meetings. Approval by the IAG Executive Committee is required for the establishment or termination of a Study Group. Guidelines for the establishment of Study -Groups are established by the Executive Committee and published in the Geodesist's Handbook.

The Chair of a Study Group is responsible for initiating and directing its work and appointing its members. Study Group membership should be balanced so as to reflect international cooperation in its subject and shall be limited to a number not exceeding 20. Corresponding members maybe selected.

The Chair of each Study Group shall issue a brief description of the work to be performed and a list of members, to be published in the Geodesist's Handbook after each General Assembly.

To assist communication and cooperation within each Study Group, its members and the commission steering committee should be kept informed, on an annual basis, of results achieved and of outstanding problems.

1.2.5 Commissions are encouraged to establish interdisciplinary JOINT SUB-COMMISSIONS, STUDY GROUPS, AND PROJECTS in topics involving more than one Commission. They are also encouraged to set up joint Commission Projects and/or Study Groups with the appropriate services. A lead-Commission shall be specified for such undertakings. Coordination amongst Commissions is the responsibility of the IAG Executive Committee.

1.3 SERVICES are part of the Association's work and generate products, using their own observations and/or observations of other services, relevant for geodesy and for other sciences and applications. Accuracy and robustness of products, quality control, timeliness, and state of the art quality are the essential aspects of the Services.

Such a Service shall set up its Terms of Reference as appropriate to accomplish its mission. Each Service works autonomously. However, at least one official IAG representative shall be a voting member of the Service's directing/governing board, and the IAG Executive Committee shall approve its Terms of Reference.

Services shall collaborate on a scientific basis with the Commissions, establish joint Service / Commission Projects, and help compile the Commissions' list of themes for Study Groups.

Services are linked to at least one of the Commissions and may be also linked to other scientific organizations, such as the International Astronomical Union (IAU) or the Federation of Astronomical and Geophysical data analysis Services (FAGS).

Services represent the Association in all domains related to the services' products.

At the present time the Association related Services are the following:

- a. International GPS Service
- b. International VLBI Service
- c. International Laser Ranging Service
- d. International Gravimetric Bureau
- e. International Geoid Service
- f. International Center for Earth Tides
- g. International Earth Rotation Service
- h. Permanent Service for Mean Sea Level
- i. Time Section of the International Bureau of Weights and Measures

The Services shall have a total of three representatives in the IAG Executive Committee. They represent the interests of all services. Their election procedure is defined in Art.2.8 c).

1.4 IAG PROJECTS are of a broad scope and of highest interest and importance for the entire field of geodesy. These Projects serve as the flagships of the Association for a long time period (decade or longer).

The IAG Executive Committee shall appoint planning groups for the creation of each IAG Project. Each IAG Project shall have a Project Steering Committee consisting of the following membership:

- a. The project chair appointed by the IAG Executive Committee
- b. One member from each Commission appointed by the Commissions' Steering Committees
- c. Two Members-at-Large proposed by the members of the Project Steering Committee and approved by the IAG Executive Committee
- d. Chairs of the IAG Project sub-groups (if any)

Guidelines for the establishment of IAG Projects are established by the Executive Committee and published in the Geodesist's Handbook.

1.5 The COMMUNICATION AND OUTREACH BRANCH provides the Association with communication, educational/public information and outreach links to the membership, to other scientific Associations and to the world as a whole.

- 1.5.1 The RESPONSIBILITIES of the Communication and Outreach Branch shall include the following tasks:
- a. Promote the recognition and usefulness of geodesy in general and IAG in particular.
 - b. Publications (newsletters)
 - c. Membership development.
 - d. General information service and outreach

The Communication and Outreach Branch may also assist the IAG Central Bureau, see 2.7, in the following tasks:

- a. Maintenance of the IAG Web page.
- b. Setting up Association schools.
- c. Setting up meetings and conferences
- d. Maintaining the Bibliographic Service

The Communication and Outreach Branch has a steering committee, the president of which is elected by the Council.

The IAG Executive Committee establishes the Branch on a long-term basis. Based on a Call for Participation, the responding organization(s) and the IAG Executive Committee shall negotiate the Terms of Reference and other conditions.

The General Secretary and the Editor-in-Chief of the Journal of Geodesy shall be ex-officio members of the Branch Steering Committee.

- 1.5.2 The IAG PUBLICATIONS include the Journal of Geodesy, the IAG Newsletter, the Geodesist's Handbook, the "Travaux de l'Association Internationale de Géodésie," IAG Special Publications, and the IAG Symposia series.

The Association's journal is the Journal of Geodesy, hereinafter referred to as the journal. The journal is published monthly through an agreement between the Association and a publishing company, or by other arrangement approved by the Executive Committee. The terms of any agreement for publication of the journal shall be negotiated by the President and ratified by the Executive Committee.

The journal publishes peer-reviewed papers, covering the whole range of geodesy, including applications.

There shall be one Editor-in-Chief for the journal, hereinafter referred to as the Editor. An Assistant Editor-in-Chief may assist the Editor. The Editor shall be advised and assisted by a Board of Editors, hereinafter referred to as the Board. To ensure broad expertise, each of the Commissions may nominate up to three members of the journal's editorial board.

The Editor shall be responsible for the scientific content of the journal. The Editor shall make the final decision on whether a refereed scientific manuscript is

accepted for publication. The Editor shall keep the Executive Committee informed of the activities and status of operations of the journal.

At the time of each General Assembly (GA), the Editor shall, in consultation and agreement with the Bureau and after consideration of suggestions from the geodetic community, recommend candidates for membership on the new Board of Editors, which is to hold office for the next period. This list of candidates shall be published on the IAG web site at least two months in advance of the General Assembly. During the assembly, the current Board shall nominate the members of the new Board from those recommended. After taking office, the new Board shall nominate one, or more, Editors(s) for the next period. The Executive Committee shall approve the nomination of the Editor(s) and concurrence with the publisher will be sought. The Editor and the members of the Board, shall each hold office for one period, but may be eligible to be re-elected for one further period.

The IAG Newsletter is under the editorial responsibility of the Communication and Outreach Branch. It is to be published and distributed both in paper form and electronically.

After each General Assembly, a special issue of the Journal of Geodesy shall be published under the name of "The Geodesist's Handbook". This issue provides the actual information on the Association, including the reports of the President and Secretary General presented at the previous General Assembly, the resolutions taken at that assembly, and the Association structure for the running period, as well as relevant scientific information.

After each General Assembly, a collection of the reports by the Association components shall be published in the "Travaux de l'Association Internationale de Géodésie". This publication is supplied free of charge to the officers of the Association and to the adhering body of each member country.

Proceedings of IAG symposia may be published in the IAG Symposia Series. The series editor is the President of the Association, with the symposia convenors acting as volume editors. All manuscripts are subject to a refereeing process, and the volume editor shall make the final decision on whether a manuscript is accepted for publication.

At every General Assembly each member country is encouraged to supply either an adequate number of copies of its National Report on geodetic work done since the previous General Assembly in hard copy or a digital copy of its national report to be placed on the IAG web site. These National Reports, as far as available, are distributed by the Central Bureau of the Association in the same manner as the "Travaux de l'Association Internationale de Géodésie".

- 1.6 INTER-COMMISSION COMMITTEES shall handle well defined, important and permanent tasks involving all commissions. Each Inter-commission Committee shall have a steering committee consisting of the following membership:
- President appointed by the IAG Executive Committee.
 - Vice-president appointed by the IAG Executive Committee.
 - One representative from each Commission

The terms of reference for each Inter-commission Committee shall be developed by a planning group appointed by the IAG Executive Committee. The Inter-commission Committees report to the IAG Executive Committee. The Inter-Commission Committee will be reviewed every eight years.

2. The ADMINISTRATION of the IAG is handled by the Membership, the General Assembly, the Council, the Executive Committee, the Bureau, and the Assistant and Assembly Secretaries.
- 2.1 The MEMBERSHIP of the Association consists of Countries, Candidate Members, Individual Members and Fellows.

The IAG Executive Committee, upon the recommendation of the Secretary General accepts individuals as Members. Applications for individual membership are made to the Bureau. Benefits of individual membership include:

- Substantial reduction on the individual subscription rate to the Journal of Geodesy.
- The right to participate in the IAG election process both as a nominator and a nominee (provided IUGG laws are observed).
- Application to become a member of the IAG Commission of choice.
- Reduction of the registration fee for IAG meetings (as defined by the by-laws 3.2, 3.3)

The Executive Committee sets the suggested membership fee per annum. Donations in addition to this amount will be used for the IAG Fund in support of young scientists. Discounts and in some instances full remission can be obtained by application. Membership is terminated if the membership fee is not paid or if an application for discount or full remission has not been received one year after the fee was due.

Past officers of the Association shall be eligible for appointment as Fellows and shall be invited to become such. The IAG Executive Committee makes these appointments.

Persons elected as officers of the Association, or nominated as members of its components, shall automatically become Candidate Members at the next General Assembly.

Persons from member countries who apply, indicating previous participation in Association activities, or providing a recommendation from their national adhering body or a recommendation from an officer or a Fellow of the Association, shall be eligible to become Candidate Members upon recommendation by the Bureau.

- 2.2 The Association shall hold its own GENERAL ASSEMBLIES in conjunction with the ordinary General Assemblies of the IUGG, at the same time and in the same country. In addition the Association may hold Scientific Assemblies, independently of IUGG, generally mid-way between the ordinary General Assemblies.

Before any General Assembly, the Bureau of the Association prepares detailed agendas for the Council, Executive Committee, the opening and the closing sessions. As far as the scientific work is concerned, the Executive Committee draws up the agenda. This agenda is sent to the member countries and to all the officers of the Association so as to reach them at least two months prior to the assembly. In principle, only matters on the agenda may be considered during the sessions, unless a decision to do otherwise is passed by a two-thirds majority in the Council concerning the agenda of the council, or in the Executive Committee concerning the scientific program.

At each General Assembly, the President shall present a detailed report on the scientific work of the Association during his/her tenure. The Secretary General shall present a detailed report on the administrative work and on the finances of the Association for the same period. They both should submit proposals regarding work to be undertaken during the coming period, within the limits of expected resources. These reports are published in "The Geodesist's Handbook".

Joint Symposia covering topics interesting two or more Associations within the Union may be arranged.

At each ordinary General Assembly, the work of each Commission, each Service, the Communication and Outreach Branch, and each IAG Project shall be reported by its President / Chair. IAG Representatives report to the Executive Committee.

A screening committee will be set up by the IAG President, in due time, to decide about the acceptance of scientific papers for presentation at the General Assemblies. The committee shall consist of one member of the Bureau and the Presidents of Commissions, Chairs of the Services and IAG Projects.

Individual authors are responsible for the reproduction of their scientific papers. The Central Bureau prior to the meeting distributes these papers to the delegates where they are presented. They may be published in the IAG Symposia Proceedings or in the Journal of Geodesy, subject to its editorial policy, or on computer disks or on the Association's web site.

- 2.3 The COUNCIL, in general, shall have the following duties:
- Examine questions of general scientific policy or administration, and propose actions deemed necessary.
 - Elect the members of the Bureau and of the Executive Committee, and the Presidents of Commissions.
 - Receive reports from the Secretary General and consider for approval the decisions or actions taken by the Bureau and the

Executive Committee since the last Council meeting.

- d. Appoint the three members of the ad hoc committee created for examining the finances of the Association, consider its recommendations and adopt the final budget.
- e. Consider proposals for changes in the Statutes and Bylaws.
- f. Decide on the venue of scientific assemblies.
- g. Approve the establishment of Inter-Commission Committees and IAG Projects.

The President of the Association convenes the Council. It shall meet at least once during each General Assembly, and may be convened at other times, normally coinciding with an IAG scientific assembly.

- 2.4 The IAG EXECUTIVE COMMITTEE, in general, shall have the following duties:
- a. Initiate actions and issue guidelines, as required, to guide the Association towards the achievement of its scientific objectives.
 - b. Fill vacancies occurring between General Assemblies, in accordance with the present Statutes and Bylaws.
 - c. Set up and dissolve Association components and approve their internal structure.
 - d. Make recommendations to the Council on matters of general policy of the Association and on the implementation of its objectives.
 - e. Appoint Fellows of the Association, upon the recommendation of the Bureau.
 - f. Accept individuals as Members of the Association.
 - g. Appoint planning groups for Inter-commission Committees and IAG Projects.
 - h. Establish Inter-commission Committees and IAG Projects.
 - i. Appoint an IAG Review Committee every eight years.
 - j. Appoint the Assistant Secretaries of the Association.
 - k. Confirm the links between Commissions and Services.
 - l. Adopt the suggested membership fee.
 - m. Appoint the Vice-president of commissions.
 - n. Appoint representatives to external bodies.

In addition, the Executive Committee has the right to establish a fund (IAG Fund) for supporting specific IAG activities as defined in the IAG Fund Rules, to be published in the Geodesist's Handbook. The fund is under the direct responsibility of the President; the fund's resources are administered by the Secretary General.

The Executive Committee may also establish awards for outstanding contributions to geodesy and distinguished service to the Association. The rules for the awards are published in the Geodesist's Handbook.

The President of the Association convenes the Executive Committee. It shall meet at General Assemblies and its members are expected to attend the meetings of the Council, with voice but without vote. It shall also meet normally at least once a year, especially one year before the General Assembly, in order to prepare the scientific agenda and the timetable of the next General Assembly.

At a meeting of the Executive Committee, no member may be represented by any other person, except a President of Commission who may be represented by the Vice-President. In order that the deliberations of the Executive Committee shall be valid, at least half of its members must be present or represented.

The agenda for each meeting of the Executive Committee shall be prepared by the Bureau and sent to the members at least three months prior to the meeting.

- 2.5 The BUREAU, in general, shall have the following duties:
- a. Draw up the agenda of the meetings of the Council and Executive Committee.
 - b. Ensure the adequate administration of the Association. It shall normally meet before each meeting of the Executive Committee.
 - c. Receive applications for individual memberships.
 - d. Recommend to the Executive Committee Candidate Members, individual Members, and Fellows.
- 2.5.1 The PRESIDENT of the Association, in general, shall have the following duties:
- a. Provide general leadership for the Association in all matters.
 - b. Convene and preside over the General Assembly and over all meetings of the Council, Executive Committee and Bureau.
 - c. Represent the Association in its dealing with national or international organizations or institutions.
 - d. Submit a report to the General Assembly on the scientific work of the Association during his/her tenure.
- 2.5.2 The VICE PRESIDENT shall act as the President whenever the President is not present or is unable to perform any of the President's duties, and shall perform such tasks as may be assigned by the President, the Executive Committee or the Council.
- 2.5.3 The SECRETARY GENERAL, shall have the following duties:
- a. Serve as secretary of the General Assembly, the Council, the Executive Committee and the Bureau; arrange for meetings of these bodies, distribute promptly the agenda and prepare and distribute the minutes of all their meetings.
 - b. Director of the Central Bureau.
 - c. Manage the affairs of the Association, attend to correspondence, and preserve the records.
 - d. Circulate all appropriate information related to the Association.
 - e. Prepare the reports of the Association's activities.
 - f. Perform such other duties as may be assigned to him by the Bureau.
- 2.6 The Secretary General is also assisted by a small number of ASSISTANT SECRETARIES, one of whom is located in the same office as the Secretary General. The function of the Secretary General and the Assistant Secretaries are unpaid and only expenses incurred in connection with them are repayable.

ASSEMBLY SECRETARIES shall be appointed by the Council on the recommendation of the adhering body of the country in which the next Ordinary or Scientific Assembly will take place. In cooperation with the Bureau, the Assembly Secretary has responsibility for liaison with the organizers working on the preparation of the Assembly.

2.7. To assist the Secretary General, the Association establishes the CENTRAL BUREAU, after invitation from a host country.

2.8 ELECTIONS shall take place by mail vote before each General Assembly and should be completed one month before the assembly.

- a. The President of the Association, after taking advice from the Executive Committee, shall appoint a Nominating Committee consisting of a Chair and three other members. The Nominating Committee, after taking advice from the adhering bodies of the member countries, officers, fellows, and members of the Association, shall normally propose at least two candidates for each position to be filled by election in the Council. Candidates shall be asked to signify their acceptance of nomination and to prepare a resume, maximum 150 words, outlining their position, research interests and activities relating to the Association. The member countries and the individual membership shall be informed of these nominations three months before the General Assembly.
- b. During the following month further nominations can be submitted by the National Delegates. Such additional nominations shall be in writing, shall be supported by at least two members of the Council, and shall be submitted with resumes as described above to the Chair of the Nominating Committee. Delegates shall be informed of these further nominations and resumes and of their supporters.

Elections shall be by mail ballot by majority vote. In this case the national delegates form the council.

No person may hold more than one of the following offices at the same time: President of the Association, Vice-President, President of a Commission, President of a Service, President of the Communication and Outreach Branch, Chair of an IAG Project.

- c. The Services' representatives to the IAG Executive Committee shall be elected as follows: The Chair of the Nominating Committee shall write to all services asking them for one nomination from each service. The Nominating Committee shall recommend normally two nominees for each of the Services' three slots, considering appropriate scientific and national distribution.

The Council will then elect the three representatives as the other Executive Committee members.

The time interval between the closures of two successive ordinary General Assemblies of the Association is called here a period.

The Vice-President is elected for one period and may not be immediately re-elected to the same office.

The President of the Association is elected for one period

The Secretary General is elected for one period initially. He/she may be re-elected for two additional periods. The same rules apply to Assistant Secretaries.

A member of the IUGG Bureau or of the IUGG Finance Committee may not occupy the post of President, of Vice-President or of Secretary General of the Association.

Should the position of President become vacant in the interval between two ordinary General Assemblies, his duties devolve to the Vice-President until the closure of the next ordinary General Assembly.

Should the post of Secretary General become vacant, the President shall arrange without delay for the Executive Committee to elect a replacement by correspondence so as to ensure the continuity of the work of the Central Bureau. This election has effect until the closure of the next ordinary General Assembly.

2.9 The Association shall initiate INTERNATIONAL COOPERATION in scientific work of international and interdisciplinary character. This includes the adequate participation in international programs and projects and the representation at scientific congresses, symposia etc. of organizations with related activities. The President of the Association decides on the proper participation or representation.

Representatives to international programs and projects shall be appointed by the Executive Committee and shall keep the President informed on the activities, on a biannual basis. The representatives shall also prepare a report to be presented at the General Assembly.

3. SCIENTIFIC MEETINGS relevant to IAG generally are the Scientific Symposia, Scientific Assemblies, and IAG sponsored Symposia. The latter two may take place at any time.

The IAG Newsletter shall include on a regular basis, a Calendar of IAG Symposia and other scientific meetings organized or sponsored by the IAG or its components.

The Executive Committee shall appoint an official IAG Representative for each of the scientific meetings to be governed by these rules. The representative is obliged to remind the organizers to obey the rules for

scientific meetings and to report back to the Executive Committee.

- 3.1 SCIENTIFIC SYMPOSIA take place at IAG General Assemblies and generally shall be organized Association component by Association component (including the sub-components) under the chairmanship of the Chairs of the components. The study of some questions may require joint meetings of several components under a chair, appointed by the Executive Committee. A committee consisting of the component Chairs shall decide on the agenda and on the inclusion of scientific presentations.

At each General Assembly Joint Scientific Symposia covering topics of interest to two or more Associations within the IUGG and/or other international scientific organizations may be arranged. Though the IAG may be asked to act as convenor or co-convenor, these symposia shall follow the rules issued by the IUGG. The IAG may participate also in joint symposia at any other time outside of the General Assemblies obeying the same procedures.

The arrangement of a scientific symposium shall be subject to the usual approval procedure provided by the Geodesist's Handbook.

- 3.2 SCIENTIFIC ASSEMBLIES are generally held at mid-way between the General Assemblies and shall consist of a group of component meetings and/or a group of Scientific Symposia, held at the same time and place.
- 3.3 The IAG may sponsor a symposium covering broad parts of geodesy and having large attendance at any suitable time outside the General or Scientific Assemblies, and shall call it an IAG SPONSORED SYMPOSIUM, provided the following conditions are fulfilled:
- a. One or more Association component or sub-component shall sponsor it or at least two Study Groups.
 - b. Host organization of the symposium shall accept a Scientific Organizing Committee (SOC) appointed by the IAG Executive Committee.
 - c. The symposium shall be open to all bona-fide scientists in accordance with the ICSU rules.
 - d. The symposium proceedings shall be published within 6-8 months.

The SOC shall be responsible for a high scientific level of the symposium. A Local Organizing Committee (LOC) shall take care of the organization and logistics. Applications for approval of an IAG Symposium should be submitted to the Secretary General at least two years before the intended date of the meeting. Detailed guidelines for such applications, and the expectations from the SOC and LOC, may be found in the Geodesist's Handbook quoted above.

4. The FINANCES of the Association derive from the following sources:
- a. Contributions of IUGG member countries of which a proportion, determined by the IUGG Council on recommendation of its Finance Committee, is paid to the Association by the Treasurer of the union.
 - b. Sale of publications.
 - c. IAG Fund collected from individual contributions for specific purposes.
 - d. Membership fees.
 - e. Other sources e.g., grants, interests, and funds remaining after a symposium.

The Secretary General is responsible to the Bureau and to the Council for managing the funds in accordance with the Statutes and Bylaws, with the decisions of the Council, and with the recommendations of the IUGG Finance Committee.

The Secretary General alone shall be responsible for control of the financial operations of the Association.

At each General Assembly of the Association the budget proposal for the next period shall be presented by the Secretary General and submitted for approval to the Council. The budget as approved by the Council shall be implemented by the Secretary General.

During the next General Assembly, the Council shall examine all expenditures to ensure that they were in accordance with the proposed budget previously approved. The Council shall appoint an ad hoc committee for carrying out this examination in detail.

In addition, these accounts shall be audited by a qualified accountant and shall then be reported to the IUGG Treasurer, as prescribed in Article 20 of the IUGG Bylaws.

STATUTES & BY-LAWS OF THE INTERNATIONAL ASSOCIATION OF GEOMAGNETISM AND AERONOMY

(Revised 19 July 1999, IUGG, Birmingham, UK, plus 28 July to accommodate changes to the IUGG statutes)

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GLOSSARY OF TERMS

Terms are defined formally in the Statutes; this glossary is included for convenience only and does not provide the formal definition of terms.

Assembly: an ordinary General Assembly, an extraordinary General Assembly, or a Scientific Assembly of IAGA.

(The) Association: IAGA.

(The) By-Laws: the By-Laws of IAGA.

Chief Delegate: the Delegate appointed by an IAGA National Body for the purpose of casting that country's vote(s) on administrative and financial matters and who has communicated his or her accreditation to the Secretary-General.

Component Bodies of IAGA: the Divisions and Interdivisional Bodies of IAGA.

Conference of Delegates: a formal meeting of Delegates and Chief Delegates of Member Countries, open to the public.

Delegate: a scientist from a Member Country who is registered for an IAGA Assembly as a *bona-fide* scientific participant, or someone who has the agreement of the Secretary-General in consultation with the IAGA Executive Committee to attend and vote as a Delegate at a Conference of Delegates.

Executive Committee: the committee elected by a Conference of Delegates to be responsible for IAGA affairs between Conferences of Delegates.

Extraordinary General Assembly: a General Assembly of IAGA called by the President in accordance with *By-Law 5*.

Finance Committee: the committee appointed by the Executive Committee to examine the accounts and report to a Conference of Delegates.

General Assembly (of IAGA): an ordinary General Assembly or an extraordinary General Assembly of IAGA.

Honorary Member of IAGA: a person who has been voted the status of honorary member of the Association in recognition of outstanding contributions to the work of IAGA.

IAGA: the International Association of Geomagnetism and Aeronomy.

IAGA National Body: the body in a Member Country that is established by the body that adheres to IUGG to represent that country in IAGA activities.

ICSU: the International Council for Science (previously called the International Council of Scientific Unions).

IUGG: the International Union of Geodesy and Geophysics.

Member Country (of IAGA): a country that adheres to IUGG and may, therefore, participate in IAGA activities. Paying Member Countries of IUGG, as defined in the IUGG statutes, are paying Member Countries of IAGA. Countries in Observer status or having Associate Membership of IUGG, as defined in the IUGG statutes, are non-paying Member Countries of IAGA.

National Correspondent: (not mentioned in the Statutes): the person to whom correspondence with the IAGA National Body of a Member Country is addressed; generally different from that Country's Chief Delegate to an Assembly.

Nominating Committee: the committee appointed by the Executive Committee to provide to a conference of

Delegates nominations for the Executive Committee (Chief Delegates may also make nominations).

Ordinary General Assembly (of IAGA): an Assembly of IAGA normally held in conjunction with an ordinary General Assembly of IUGG (i.e., every 4 years).

Period: the interval between the end of one ordinary General Assembly of IAGA and the end of the next ordinary General Assembly of IAGA.

Scientific Assembly (of IAGA): an Assembly of IAGA normally held between ordinary General Assemblies.

(The) Statutes: the Statutes of IAGA.

STATUTES OF IAGA

I. OBJECTIVES, STRUCTURE, AND MEMBERSHIP OF THE ASSOCIATION

Statute 1. Objectives of IAGA

The objectives of the International Association of Geomagnetism and Aeronomy (henceforth IAGA) are:

- a. to promote studies of the 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 international co-ordination of such research;
- c. to provide an opportunity on an international basis for discussion and publication of the results of the research indicated above;
- d. to promote appropriate standardisations of observational programmes, data acquisition systems, data analysis, and publications.

Statute 2. Establishment of Component Bodies

To achieve its objectives, the Association may establish Component Bodies both within the Association and jointly with other Associations of the International Union of Geodesy and Geophysics (IUGG) or components of other Bodies of the International Council for Science (ICSU).

Statute 3. A Member Country of IAGA

A country that adheres to IUGG, as defined in the IUGG Statutes, is a Member Country of IAGA and may participate in IAGA activities. Paying Member Countries of IUGG, as defined in the IUGG statutes, are paying Member Countries of IAGA. Countries in Observer status or having Associate Membership of IUGG, as defined in the IUGG statutes, are non-paying Member Countries of IAGA.

Statute 4. An IAGA National Body

Each Member Country shall be represented by a single body, henceforth referred to as the IAGA National Body, established in that country by the body that adheres to IUGG.

II. ADMINISTRATION

Statute 5. Assemblies of IAGA

- 5.1 An ordinary General Assembly of IAGA shall normally be held in conjunction with each ordinary General Assembly of IUGG.
- 5.2 The interval between the end of one ordinary General Assembly and the end of the next one is, for the purposes of the Statutes, termed one Period.
- 5.3 A Scientific Assembly of IAGA may be held between ordinary General Assemblies of IAGA, in accordance with IUGG By-Laws.
- 5.4 An extraordinary General Assembly of IAGA may be convened by the President in accordance with the By-Laws.

Statute 6. Delegates and Conferences of Delegates

- 6.1 The work of the Association shall be directed by Conferences of Delegates held at Assemblies of IAGA.
- 6.2 A Delegate is a scientist from a Member Country who is registered for an Assembly as a *bona-fide* scientific participant, or someone who has the agreement of the Secretary-General in consultation with the IAGA Executive Committee to attend and vote as a Delegate at a Conference of Delegates.
- 6.3 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 *Statutes 12, 13 and 14*. A Chief Delegate may be represented in voting matters by another Delegate appointed in accordance with the By-Laws.
- 6.4 A Delegate may represent only one Member Country. A member of the Executive Committee (see *Statute 7*) may not be a Chief Delegate, except when that member is the only person in attendance from the country in question.
- 6.5 A Conference of Delegates shall be convened at least once during each Assembly of IAGA.

Statute 7. The Executive Committee

- 7.1 Responsibility for the direction of IAGA affairs between Conferences of Delegates shall rest with an Executive Committee of the Association, elected at a Conference of Delegates.
- 7.2 Decisions of the Executive Committee must be reported to a Conference of Delegates. Any decision or recommendation failing to receive simple majority support from a Conference of Delegates shall be referred to the Executive Committee for further study.
- 7.3 The duties of the Executive Committee shall be to administer the affairs of the Association in accordance with these Statutes and By-Laws and the decisions of a Conference of Delegates.
- 7.4 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 may appoint appropriate leaders and IAGA representatives.
- 7.5 In its dealings with non-IUGG Bodies, the Executive Committee shall not commit the name of IUGG, or act on behalf of IUGG, unless prior approval has been secured from the IUGG Executive Committee.
- 7.6 The Executive Committee shall meet at least twice at each Assembly, and must meet at least once more between ordinary General Assemblies.

Statute 8. Membership of the Executive Committee

- 8.1 The Executive Committee shall consist of the President, two Vice-Presidents, the Secretary-General, five additional Members, and the retiring President (*ex-officio*). Except for the retiring President, all members of the Executive Committee shall be elected by a Conference of Delegates as an administrative matter with voting as stipulated in *Statutes 13* and *14*.
- 8.2 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. Each of the five additional Members shall be elected for one Period and may be re-elected for successive single Periods, but may not hold office as an additional Member for more than three consecutive Periods. The retiring President is a member *ex-officio* for one Period. With the exception of the election of the Secretary-General, no person who has served on the Committee for four Periods shall be eligible for further election to any position on the IAGA Executive Committee.
- 8.3 The Secretary-General shall be elected for eight years and may be re-elected for successive four-year terms.
- 8.4 The election of the Executive Committee shall normally take place at a Conference of Delegates held at an ordinary General Assembly, with the exception of the Secretary-General who shall normally be elected at a Conference of Delegates held at a Scientific Assembly.
- 8.5 In the event of any vacancy occurring in the membership of the Executive Committee during a Period, the Executive Committee shall appoint a person to fill the vacancy until the next election. 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.

Statute 9. Duties of Component Bodies

- 9.1 The duties of the Component Bodies within IAGA (see *Statute 2*) shall be to further the scientific objectives of IAGA through:
 - (a) co-ordination of appropriate scientific research;
 - (b) organisation of scientific meetings;
 - (c) promotion of the exchange of information and data; and
 - (d) provision of advice to the Executive Committee on the formulation of policies to guide the scientific work of the Association.
- 9.2 The duties of the Component Bodies established jointly with other Associations of IUGG or other ICSU Bodies (see *Statute 2*) shall be to deal with and co-ordinate those scientific programmes and/or meetings that cover topics of mutual interest.

III. FINANCE

Statute 10. Adoption of the budget

The Secretary-General shall prepare a budget estimate of receipts and expenditures for each half-Period and present this budget before the Executive Committee and a Conference of Delegates at the time of an Assembly. On receiving the approval of both the Executive Committee and a Conference of Delegates, the Secretary-General shall proceed with the disbursement of funds in accordance with that approved budget.

Statute 11. Finance Committee

- 11.1 A Finance Committee shall be appointed by the Executive Committee within six months after the opening of each ordinary General Assembly and shall normally serve for one Period.
- 11.2 No serving Executive Committee Member may be a member of the Finance Committee.
- 11.3 The Finance Committee shall examine the accounts and report the results of their examination for approval to the Executive Committee and to a Conference of Delegates.

IV. VOTING

Statute 12. Categories of Voting Matters

- 12.1 Prior to a vote by a conference of Delegates, the President shall decide whether the matter under consideration is scientific, administrative, or financial.
- 12.2 Matters that are partly scientific and partly administrative and do not involve matters of finance shall be classified as administrative matters.
- 12.3 The President's ruling may be challenged only by the Chief Delegate of a Member Country. In the event of a challenge, the President's ruling can be changed in accordance with a vote passed at the Conference of Delegates by a two-thirds majority of the Chief Delegates of paying Member Countries present.

Statute 13. Voting Rules

- 13.1 When a vote is taken on a scientific matter, each Delegate present at a conference of Delegates shall have one vote.
- 13.2 When a vote is taken on an administrative matter, voting shall be by paying Member Countries, each paying Member Country having one vote cast by its Chief Delegate, or that person's representative in accordance with the By-Laws.
- 13.3 When a vote is taken on a financial matter, voting shall be by paying Member Countries, each paying 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 paying Member Country, or that person's representative in accordance with the By-Laws.
- 13.4 Voting on administrative or financial matters may be conducted by correspondence (in accordance with the By-Laws) as an alternative to a vote taken at a Conference of Delegates.

Statute 14. Voting at Conferences of Delegates

- 14.1 Decisions taken by a vote at a Conference of Delegates shall be valid only if at least half of the Chief Delegates of paying Member Countries attending the Assembly are present or represented in accordance with the By-Laws.
- 14.2 Decisions of a Conference of Delegates shall be taken by a simple majority of the votes cast, except as otherwise specified in the Statutes. Simple or two-thirds majority shall be determined by the proportion of affirmative votes to the sum of the affirmative and negative votes, including correspondence votes by paying Member Countries on administrative and financial matters as specified in the By-Laws, and excluding abstentions. If a tie should occur, the decision shall rest with the President.

V. GENERAL**Statute 15. Modification of the Statutes**

- 15.1 Modifications to these Statutes shall come into force at the close of the General Assembly at which the modifications are adopted, or as otherwise decided by a Conference of Delegates.
- 15.2 These Statutes may only be modified with the approval of at least a two-thirds majority of Chief Delegates of paying Member Countries present at a Conference of Delegates held during a General Assembly, in accordance with *Statutes 6, 13, and 14*.
- 15.3 Only the IAGA National Body of a Member Country may propose a change to these Statutes. Any such proposal must reach the Secretary-General at least four months prior to the announced date of the General Assembly at which it is to be considered. The Secretary-General shall notify all IAGA National Bodies of any proposed change at least two months prior to the announced date of the General Assembly.

Statute 16. Modification of the By-Laws

A Conference of Delegates shall have the power to adopt By-Laws within the framework of the Statutes of the Association. These By-Laws may be adopted or modified by a simple majority vote of Chief Delegates of paying Member Countries present at a General Assembly, in accordance with *Statutes 5, 13, and 14*. Any modification of the By-Laws shall come into force at the close of the General Assembly at which they are approved unless otherwise decided by the Conference of Delegates.

Statute 17. Languages

The present Statutes have been prepared in the official languages of the IUGG. The English text shall take precedence if there is a question of interpretation

BY-LAWS OF IAGA

I. COMPOSITION**By-Law 1. Component Bodies of IAGA**

The Component Bodies of IAGA shall be called Divisions and Interdivisional Bodies 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

By-Law 2. Role and Structure of a Component Body

- 2.1 Each Division or Interdivisional Body shall propose to the Executive Committee its own role, structure, and mode of operation, which must be approved by the Executive Committee.

- 2.2 The role and the effectiveness of each Division and Interdivisional Body shall be reviewed by the Executive Committee at each ordinary General Assembly.

By-Law 3. Appointment of Leaders of Component Bodies

- 3.1 The leaders of each Division and Interdivisional Body shall be appointed by the Executive Committee for one Period, subject to ratification by a Conference of Delegates. Vacancies occurring in the interim shall be filled by a person appointed by the Executive Committee.
- 3.2 In order that their appointments shall become effective, Division and Interdivisional Body leaders must express in writing to the President their willingness to serve.
- 3.3 The leaders of Divisions and Interdivisional Bodies may appoint, for each Period, Reporters, Working Group leaders, and the leaders of other possible subdivisions.
- 3.4 While it is recognized that the prime criteria for the appointment of leaders should be the scientific and administrative competence of the candidates, the Executive Committee and Division and Interdivisional Body leaders shall ensure that, wherever possible, these appointments achieve a diversified geographical representation.

By-Law 4. Honorary Membership of IAGA

- 4.1 A person who has given outstanding service to IAGA may be elected by a Conference of Delegates as an "Honorary Member of IAGA". The Executive Committee shall select persons for this category and shall present their names to a Conference of Delegates for approval.
- 4.2 The names of Honorary Members of IAGA shall be listed in publications where the structure of IAGA is shown and they shall be entitled to receive free from the Secretary-General, IAGA News, Transactions, and IAGA Programme-Abstract booklets.

II. ADMINISTRATION**By-Law 5. Extraordinary General Assemblies**

- 5.1 The President may at any time, with the approval of the Executive Committee, call an extraordinary General Assembly.
- 5.2 The President must call an extraordinary General Assembly at the request of not less than twenty-five Member Countries.
- 5.3 Such an extraordinary General Assembly must be held no later than nine months after the request.
- 5.4 An extraordinary General Assembly shall have the same powers and be subject to the same rules as an ordinary General Assembly.

By-Law 6. Notice of an Assembly

Notice of the date and place of an ordinary General Assembly or a Scientific Assembly shall be sent by the Secretary-General to the Member Countries at least nine months prior to that Assembly. The notice period for an extraordinary General Assembly shall be four months.

By-Law 7. The Agenda for a Conference of Delegates

- 7.1 A provisional agenda for a Conference of Delegates shall be prepared by the Secretary-General and

circulated to IAGA National Bodies at least two months prior to the opening of an Assembly.

- 7.2 The provisional agenda shall include all items submitted by IAGA National Bodies for discussion at the Conference of Delegates, together with questions placed on the provisional agenda by the Executive Committee. Additional agenda items, for which notice has not thus been given, may only be discussed with the consent of the Conference of Delegates.

By-Law 8. Attendance at a Conference of Delegates

- 8.1 Conferences of Delegates shall be open to the public. Any non-delegate shall be heard in a discussion provided that person has the consent of the President.
- 8.2 The President may, on his or her own initiative or at the request of a National Body, invite representatives of scientific bodies or individuals to attend a Conference of Delegates in an advisory capacity.

By-Law 9. Voting at a Conference of Delegates

- 9.1 A Member Country not represented at a Conference of Delegates may vote by correspondence on any matter declared to be administrative or financial, with the exception of the election of the Executive Committee, provided that (i) the matter has been clearly defined in the final agenda distributed in advance to the Member Countries, (ii) the substance of the matter has not been changed, and (iii) the said vote has been received by the Secretary-General prior to the meeting.
- 9.2 Prior to 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 12*.

By-Law 10. Representation on behalf of a Chief Delegate

A Chief Delegate of a Member Country may designate another Delegate from that country to be his or her representative at all or part of a Conference of Delegates. If the Chief Delegate is unable to do this, the accredited Delegates from that Member Country may designate one of their members to represent the Chief Delegate. In either case, the Secretary-General shall be informed of the designation in writing prior to the Conference of Delegates at which the representative of the Chief Delegate is to act.

By-Law 11. Nominations and Election of the Executive Committee

- 11.1 At least six months prior to 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.
- 11.2 The Nominating Committee shall nominate at least one candidate for each position on the Executive Committee and notify the Secretary-General so that these nominations are circulated to all IAGA National Bodies at least two months prior to the election.
- 11.3 The IAGA National Body of any Member Country may make other nominations in writing to the Chairman of the Nominating Committee at least one month prior to the election. To qualify for candidacy, each individual nomination must be supported by at least three Member Countries and must be accompanied by the written agreement of the nominee to stand. The combined list of

candidates must be made public at least one day prior to the election.

- 11.4 The composition of the Executive Committee should reflect diversified geographical and scientific disciplinary representation.
- 11.5 Members of the Executive Committee shall be elected by secret ballot. The President shall select two scrutineers for the election from among the Delegates present. The scrutineers shall not be members of the Executive Committee nor of the Nominating Committee nor candidates for the election.
- 11.6 Scientists from countries that are not Member Countries of IAGA or are represented by Adhering Bodies that have been in Observer status for more than two years or have Associate Membership (as defined in the IUGG Statutes) are not eligible to hold elected positions in IAGA.

By-Law 12. Meetings of the Executive Committee

- 12.1 Executive Committee meetings shall be convened by the President, or jointly by the Vice-Presidents when the President is not available. At a meeting of the Executive Committee, no member can be represented by another person. Decisions of the Executive Committee shall be valid only if at least half of its members are 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.
- 12.2 When the importance and urgency of a decision warrant it, a vote by correspondence may be organized by the Secretary-General at the request of the President. Voting rules stipulated in these Statutes and By-Laws shall apply.
- 12.3 The President may, on his or her 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.
- 12.4 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 must be in the hands of the Secretary-General at least one month prior to the meeting. The final agenda, after its approval by the President, shall be distributed to the members of the Executive Committee at least one week prior to the meeting.

By-Law 13. Duties of the Executive Committee

In addition to the duties specified in *Statutes 7 and 8* and *By-Laws 2, 3, 4, 5, 7, 11, and 12*, and subject to directives of a 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 that are not members of the Association to be local correspondents to the Association.

By-Law 14. Duties of the President

The duties of the President of IAGA are:

- (a) to represent IAGA in the IUGG Executive Committee;
- (b) to represent IAGA in its dealings with IAGA National Bodies, other IUGG Associations, and other ICSU Bodies;
- (c) to represent or to appoint a person to represent IAGA at meetings, conferences, or functions where formal representation is requested or desirable;
- (d) to convene Conferences of Delegates and meetings of the Executive Committee and to preside over these meetings;
- (e) to submit a report on the scientific work of the Association to a Conference of Delegates at each Assembly.

By-Law 15. Representation on behalf of the President

If the President is not available, the Executive Committee shall appoint one of the Vice-Presidents to preside at a Conference of Delegates or an Executive Committee meeting, and one of the Vice-Presidents or the Secretary-General to represent the President at an IUGG Executive Committee Meeting in accordance with IUGG By-Laws. The President may designate one of the Vice-Presidents to act on his or her behalf in any other function, meeting, or conference in which formal representation of IAGA is requested or desirable.

By-Law 16. Duties of the Secretary-General

The duties of the Secretary-General are:

- (a) to serve as secretary of IAGA, to organize Assemblies according to the instructions of the Executive Committee, to arrange meetings of the Executive Committee, and to prepare and distribute promptly the agenda and minutes of Conferences of Delegates and meetings of the Executive Committee;
- (b) to manage the administrative and scientific affairs of the Association, to attend to correspondence, and to maintain and preserve the records of the Association;
- (c) to inform members of the Executive Committee during the interval between its meetings about any important matter concerning the Association;
- (d) to advise the President during the meetings of the IUGG Executive Committee;
- (e) to receive and take charge of such funds as may be allocated by IUGG to the Association, or as may be received from any other source; to disburse such funds in accordance with the decisions of Conferences of Delegates or with the instructions of the Executive Committee; to keep 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 *Statute 11*;
- (f) to prepare and arrange publication of the Programme of each Assembly, and a report on the outcomes;
- (g) to publish an internal Association bulletin (such as IAGA News) containing information of general interest to the Association;
- (h) to prepare for each Assembly the list of Chief Delegates;

- (i) to perform such other duties as may be assigned by the President or by the Executive Committee.

III. FINANCEBy-Law 17. Allocation of Funds

In the estimation of expenditures by the Secretary-General and approval thereof by the Executive Committee, as mentioned in Statute 10, provision may be made to allocate the expected funds to:

- operation of the Secretariat of the Association;
- administrative arrangements in preparation for Assemblies and Executive Committee meetings;
- publication on paper or electronically of IAGA News, IAGA Transactions, series of Geomagnetic Indices for which IAGA has primary responsibility, or special publications;
- assistance for the President to attend IUGG Committee meetings and for IAGA officers to attend functions as the representative of IAGA when such officers are unable to obtain the necessary support from other sources;
- assistance for officers of IAGA, meeting organisers, and scientists to attend official administrative meetings or IAGA-sponsored scientific meetings when participation by such persons is judged by the Executive Committee to be essential for the success of the meeting and those persons have expressed in writing that they are unable to obtain the necessary support from other sources;
- minor administrative expenses requested by leaders of Divisions, Joint Bodies, and Interdivisional Bodies who have expressed in writing that they are unable to obtain the necessary support from other sources,
- any item not mentioned above for which support will contribute to achieving the objectives of the Association.

Adopted at IUGG '99, Birmingham, UK - 28 July 1999

STATUTS & RÈGLEMENT INTÉRIEUR DE L'ASSOCIATION INTERNATIONALE DE GÉOMAGNÉTISME ET D'AÉRONOMIE

(Modifiés durant la XXII^{ème} Assemblée Générale de l'UGGI, le 19 Juillet 1999
et le 28 Juillet pour tenir compte des modifications des statuts de l'UGGI)

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Ce sont les statuts qui fournissent la définition des termes qui y sont utilisés ; ce glossaire a été établi uniquement pour des raisons pratiques, mais il ne peut en aucun cas servir de référence pour définir les termes qui y figurent.

AIGA: l'Association Internationale de Géomagnétisme et d'Aéronomie.

Assemblée: une Assemblée générale ordinaire, une Assemblée générale extraordinaire ou une Assemblée scientifique de l'AIGA.

Assemblée générale (de l'AIGA): une Assemblée générale ordinaire ou une Assemblée générale extraordinaire de l'AIGA.

Assemblée générale extraordinaire: une Assemblée générale de l'AIGA convoquée par le président, conformément à l'article RI-5.

Assemblée générale ordinaire (de l'AIGA): une Assemblée générale de l'AIGA tenue normalement en même temps qu'une Assemblée générale ordinaire de l'UGGI (c'est à dire tous les 4 ans).

Assemblée scientifique (de l'AIGA): une Assemblée de l'AIGA normalement tenue entre les Assemblées générales ordinaires.

L'Association: l'AIGA.

CIUS: Conseil International pour la Science (auparavant appelé Conseil International des Unions Scientifiques).

Comité de nomination: le comité nommé par le Conseil exécutif pour fournir à une Conférence des délégués des propositions de candidature au Conseil exécutif (les Délégués nationaux peuvent aussi proposer des candidatures).

Commission des finances: la commission nommée par le Conseil exécutif pour examiner les comptes et en présenter le résultat devant une Conférence des délégués.

Conférence des délégués: une réunion formelle, ouverte au public, des Délégués et Délégués nationaux des pays membres.

Conseil exécutif: le conseil élu par une Conférence des délégués pour être responsable des affaires de l'AIGA entre les Conférences des délégués.

Contact national (non mentionné dans les Statuts): la personne à qui est adressée la correspondance avec le Correspondant national d'un Pays membre ; ce n'est généralement pas la même personne que le Délégué national de ce pays pour une Assemblée.

Correspondant national de l'AIGA: l'organisme d'un Pays membre, nommé par l'organisme adhérent de l'UGGI pour ce pays afin de représenter ce pays dans les activités de l'AIGA.

Délégué: un scientifique d'un Pays membre qui est inscrit pour une Assemblée de l'AIGA en tant que participant scientifique bona fide, ou toute personne que le ou la Secrétaire-général a autorisé, en consultation avec le Conseil exécutif de l'AIGA, à participer et à voter comme Délégué à une Conférence des délégués.

Délégué national: le Délégué accrédité par le Correspondant national de l'AIGA afin de voter au nom de son pays lors de votes de nature administrative et financière, et qui a transmis son accréditation au (à la) Secrétaire général(e).

Groupements constitutifs de l'AIGA: les Divisions et Commissions interdivisions de l'AIGA.

Membre honoraire de l'AIGA: une personne pour a été voté le statut de membre honoraire de l'Association, en reconnaissance pour une contribution remarquable au travail de l'AIGA.

Pays membre (de l'AIGA): Un pays qui adhère à l'UGGI, et peut donc participer aux activités de l'AIGA. Les Pays membres à titre payant de l'UGGI, ainsi qu'il est défini dans les statuts de l'UGGI, sont Pays membres à titre payant de l'AIGA. Les pays ayant un statut d'Observateur, ou de Membre associé de l'UGGI, ainsi qu'il est défini dans les statuts de l'UGGI, sont Pays membres à titre gracieux de l'AIGA.

Période: l'intervalle entre la fin d'une Assemblée générale ordinaire et la fin de la suivante.

Règlement intérieur: le Règlement intérieur de l'AIGA.

Statuts: les statuts de l'AIGA

UGGI: l'Union Géodésique et Géophysique Internationale

STATUTS DE L'AIGA

I. OBJECTIFS, STRUCTURE ET COMPOSITION DE L'ASSOCIATION

Statut 1. Objectifs de l'AIGA

L'Association Internationale de Géomagnétisme et d'Aéronomie (ci-après AIGA) a pour objectifs:

- a. de promouvoir l'étude du magnétisme et de l'aéronomie de la Terre et des autres corps du système solaire, ainsi que celle du milieu interplanétaire et de ses interactions avec ces corps, lorsque ces études ont un intérêt international;
- b. d'encourager, dans les domaines mentionnés dans l'alinéa précédent, la recherche par des pays, institutions ou personnes individuels et de faciliter la coordination internationale de ces recherches;
- c. de fournir au niveau international un cadre pour la discussion et la publication des résultats des recherches décrites dans les alinéas précédents;
- d. de promouvoir les standardisations appropriées en matière de programme d'observation, de systèmes d'acquisition et d'analyse de données, et de publication.

Statut 2 Création de Groupements constitutifs

Afin d'atteindre ses objectifs, l'Association peut créer des Groupements constitutifs, soit à l'intérieur de l'Association, soit en commun avec d'autres Associations de l'Union Internationale de Géodésie et Géophysique (UGGI) ou avec des composantes d'autres membres du Conseil International pour la Science (CIUS).

Statut 3 Pay membre de l'AIGA

Un pays qui adhère à l'UGGI, ainsi qu'il est défini dans les statuts de l'UGGI, est un Pays membre de l'AIGA et peut participer aux activités de l'AIGA. Les Pays membres à titre payant de l'UGGI, ainsi qu'il est défini dans les statuts de l'UGGI, sont Pays membres à titre payant de l'AIGA. Les pays ayant un statut d'Observateur, ou de Membre associé de l'UGGI, ainsi qu'il est défini dans les statuts de l'UGGI, sont Pays membres à titre gracieux de l'AIGA.

Statut 4 Correspondants Nationaux de l'AIGA

Chaque Pays membre est représenté par un seul organisme, appelé dans la suite Correspondant national de l'AIGA. Cet organisme est nommé dans ce pays par l'Organisme adhérent de l'UGGI.

II. ADMINISTRATION

Statut 5 Assemblées de l'AIGA

- 5.1 Une Assemblée générale ordinaire de l'AIGA se tient normalement en même temps que chaque Assemblée générale ordinaire de l'UGGI.
- 5.2 L'intervalle entre la fin d'une Assemblée générale ordinaire et la fin de la suivante est appelée Période pour les besoins des présents Statuts.
- 5.3 Une Assemblée scientifique de l'AIGA peut se tenir entre deux Assemblées générales ordinaires, conformément au Règlement intérieur de l'UGGI.
- 5.4 Une Assemblée générale extraordinaire de l'AIGA peut être convoquée par le (la) Président(e) conformément au Règlement intérieur.

Statut 6 Délégués et Conférences des délégués

- 6.1 L'activité de l'Association est dirigée par les Conférences des délégués tenues durant les Assemblées de l'AIGA.
- 6.2 Un Délégué est un scientifique d'un Pays membre qui est inscrit pour une Assemblée en tant que participant scientifique *bona fide*, ou toute personne que le ou la Secrétaire-général a autorisé, en consultation avec le Conseil exécutif de l'AIGA, à participer et à voter comme Délégué à une Conférence des délégués.
- 6.3 Parmi les Délégués de chaque Pays membre, l'un d'entre eux est accrédité en tant que Délégué national par le Correspondant national de l'AIGA pour ce pays, afin de voter au nom de son pays lors de votes de nature administrative et financière, ainsi qu'il est stipulé aux articles *St-12*, *St-13* et *St-14*. Un délégué national peut être représenté lors d'un vote par un autre Délégué désigné conformément au Règlement intérieur.
- 6.4 Un Délégué ne peut représenter qu'un seul Pays membre. Un membre du Conseil exécutif (voir *St-7*) ne peut être Délégué national, sauf si ce membre est la seule personne du pays en question qui soit présente.
- 6.5 Une Conférence des délégués est convoquée au moins une fois durant chaque Assemblée de l'AIGA.

Statut 7 Le Conseil exécutif

- 7.1 Entre les Conférences de délégués, la responsabilité pour la direction des affaires de l'AIGA est détenue par le Conseil exécutif de l'Association, élu durant une Conférence des délégués.
- 7.2 Un compte rendu des décisions du Conseil exécutif doit être présentés lors d'une Conférence des délégués. Toute décision ou recommandation qui n'obtient pas un soutien à la majorité simple lors d'une Conférence des délégués est renvoyée au Conseil exécutif pour examen complémentaire.
- 7.3 La responsabilité du Conseil exécutif est d'administrer les affaires de l'Association conformément aux présents Statuts et Règlement intérieur et aux décisions des Conférences des délégués.
- 7.4 Le Conseil exécutif peut créer, avec d'autres Associations de l'UGGI ou avec d'autres membres du CIUS, des Groupements constitutifs communs afin de prendre en charge des thèmes d'intérêt commun, et il peut accréditer les responsables et représentants de l'AIGA compétents.

- 7.5 Dans ses rapports avec des Groupements qui ne font pas partie de l'UGGI, le Conseil exécutif ne peut engager le nom de l'UGGI, ni agir au nom de l'UGGI, sans s'être assuré au préalable de l'accord du Comité exécutif de l'UGGI.
- 7.6 Le Conseil exécutif se réunit au moins deux fois durant chaque Assemblée, et il doit tenir au moins une réunion supplémentaire entre deux Assemblées générales ordinaires.

Statut 8 Composition du Conseil exécutif

- 8.1 Le Conseil exécutif se compose du (de la) Président(e), de deux Vice-Présidents, du Secrétaire-général, de cinq membres supplémentaires, et du (de la) Président(e) sortant(e) (*ex officio*). A l'exception du (de la) Président(e) sortant(e), tous les membres du Conseil exécutif sont élus par une Conférence des délégués ; l'élection est considérée comme un vote sur une question administrative, conduit conformément aux articles *St-13* et *St-14*.
- 8.2 Le (la) Président(e) est élu(e) pour une Période, et ne il peut pas être réélu à la même fonction. Les Vice-Présidents sont élus pour une Période, et ils peuvent être réélus une fois. Un(e) Vice-Président(e) sortant(e) peut être élu Président(e). Chacun des cinq membres supplémentaires est élu pour une Période, et il peut être réélu pour des Périodes simples successives, mais il ne peut avoir un mandat de membre supplémentaire pour plus de trois Périodes consécutives. Le (la) Président(e) sortant est membre *ex officio* pour une Période. À l'exception de l'élection du Secrétaire-général, toute personne ayant été membre du Conseil durant quatre Périodes ne peut être candidate à une élection pour un des postes du Conseil exécutif de l'AIGA.
- 8.3 Le Secrétaire-général est élu pour huit ans, et peut être réélu pour des mandats successifs de quatre ans.
- 8.4 L'élection du Conseil exécutif est normalement organisée au cours d'une Conférence des délégués tenue durant un Assemblée générale ordinaire, sauf en ce qui concerne le ou la Secrétaire-général qui est normalement élu au cours d'une Conférence des délégués tenue durant une Assemblée scientifique.
- 8.5 En cas de vacance de l'un des postes du Conseil exécutif durant une Période, le Conseil exécutif mandate une personne pour pourvoir le poste vacant jusqu'à la prochaine élection. L'éligibilité de la personne ainsi mandatée n'est pas modifiée par cette nomination. Si c'est la Présidence qui est vacante, le Conseil exécutif mandate un(e) des deux Vice-présidents pour agir en tant que Président(e).

Statut 9 Responsabilités des Groupements constitutifs

- 9.1 Les responsabilités à l'intérieur de l'AIGA des Groupements constitutifs (*cf. St-2*) sont de servir les objectifs scientifiques de l'AIGA en:
- (a) coordonnant une recherche scientifique appropriée;
 - (b) organisant des réunions scientifiques;
 - (c) promouvant l'échange d'informations et de données;
 - (d) conseillant le Conseil exécutif pour la formulation des principes devant guider le travail scientifique de l'Association.
- 9.2 Les responsabilités des Groupements constitutifs créés en commun avec d'autres Associations de l'UGGI ou d'autres composantes du CIUS (*cf. St-2*) est de prendre en charge et de coordonner les programmes scientifiques et/ou réunions qui couvrent des thèmes d'intérêt commun.

III. FINANCE

Statut 10 Adoption du budget

Le Secrétaire-général prépare un budget prévisionnel des dépenses et des recettes pour chaque demi-Période, et présente ce budget devant le Conseil exécutif et une Conférence des délégués durant une Assemblée. Après avoir reçu l'approbation du Conseil exécutif et de la Conférence des délégués, le ou la Secrétaire-général engage les dépenses conformément au budget approuvé.

Statut 11 Commission des finances

- 11.1 Une Commission des finances est nommée par le Conseil exécutif dans les six mois qui suivent l'ouverture de chaque Assemblée générale ordinaire et elle reste normalement en fonction pour une Période.
- 11.2 Aucun membre du Conseil exécutif ne peut être membre de la Commission des finances.
- 11.3 La Commission des finances examine les comptes et présente pour approbation les résultats de cet examen devant le Conseil exécutif et devant une Conférence des délégués.

IV. VOTE

Statut 12 Nature des questions soumises au vote

- 12.1 Avant un vote par une Conférence des délégués, le (la) Président(e) décide si la nature de la question considérée est scientifique, administrative ou financière.
- 12.2 Des questions qui sont partiellement scientifiques et partiellement administratives et qui n'impliquent aucune question financière sont considérées comme des questions administratives
- 12.3 La décision du (de la) Président(e) ne peut être contestée que par le Délégué national d'un Pays membre. En cas de contestation, la décision du (de la) Président(e) peut être modifiée conformément à un vote de la Conférence des délégués acquis à la majorité des deux tiers des Délégués nationaux de Pays membres à titre payant qui sont présents.

Statut 13 Procédures de vote

- 13.1 Dans le cas d'un vote sur une question scientifique, chaque Délégué présent à la Conférence des Délégués a une voix.
- 13.2 Dans le cas d'un vote sur une question administrative, les votants sont les Pays membres à titre payant, chaque Pays membre à titre payant disposant d'une voix exprimée par son Délégué national, ou par son représentant désigné conformément au Règlement intérieur.
- 13.3 Dans le cas d'un vote sur une question financière, les votants sont les Pays membres à titre payant, chaque Pays membre à titre payant disposant d'un nombre de voix correspondant à celui de sa catégorie en tant que membre de l'UGGI. Ces votes seront exprimés par le Délégué national de chaque Pays membre à titre payant, ou par son représentant désigné conformément au Règlement intérieur.
- 13.4 Les votes sur des questions administratives ou financières peuvent être effectués par correspondance (conformément au Règlement intérieur), à la place d'un vote organisé durant une Conférence des délégués.

Statut 14 Votes durant les Conférences des délégués

- 14.1 Les décisions prises à la suite d'un vote durant une Conférence des délégués ne sont valides que si au moins la moitié des Délégués nationaux de Pays membres à titre payant participant à l'Assemblée sont présents ou représentés conformément aux Règlement intérieur.
- 14.2 Les décisions d'une Conférence des délégués sont acquises à la majorité simple des votes exprimés, sauf indication contraire dans les Statuts. La majorité simple ou des deux tiers est déterminée comme le rapport des votes positifs sur la somme des votes positifs et négatifs, y compris les votes par correspondance de Pays membres à titre payant pour des questions administratives ou financières conformément au Règlement intérieur, et sans prendre en compte les abstentions. En cas d'égalité, la décision appartient au (à la) Président(e).

V. GÉNÉRALITÉSStatut 15 Modification des Statuts

- 15.1 Les modifications des présents Statuts prennent effet à la clôture de l'Assemblée générale durant laquelle ces modifications sont adoptées, ou ainsi qu'il en est décidé autrement par la Conférence des délégués.
- 15.2 Les présents Statuts ne peuvent être modifiés qu'avec l'approbation d'une majorité d'au moins les deux tiers des Délégués nationaux de Pays membres à titre payant présents à une Conférence des délégués tenue durant une Assemblée générale, conformément aux articles *St-6*, *St-13* et *St-14*.
- 15.3 Seul le Correspondant national d'un Pays membre de l'AIGA peut proposer une modification des présents statuts. Toute proposition doit être soumise au ou à la Secrétaire-général au moins quatre mois avant la date annoncée pour l'Assemblée générale durant laquelle cette proposition doit être examinée. Le Secrétaire-général notifie à tous les Correspondants nationaux de l'AIGA les modifications proposées au moins deux mois avant la date annoncée pour cette Assemblée générale.

St-16 Modification du Règlement intérieur

Une Conférence des délégués a le pouvoir d'adopter un Règlement intérieur dans le cadre des Statuts de l'Association. Ce Règlement intérieur peut être adopté ou modifié par un vote à la majorité simple des Délégués nationaux de Pays membres à titre payant présents à une Assemblée générale, conformément aux articles *St-5*, *St-13* et *St-14*. Toutes modifications du Règlement intérieur prend effet à la clôture de l'Assemblée générale durant laquelle ces modifications sont adoptées sauf s'il en est décidé autrement par la Conférence des délégués.

Statut 17 Langues

Les présents Statuts ont été rédigés dans les langues officielles de l'UGGI. Le texte Anglais servira de référence en cas de problèmes d'interprétation.

RÈGLEMENT INTÉRIEUR DE L'AIGA**I. COMPOSITION**Règlement 1 Groupements constitutifs de l'AIGA

Les groupements constitutifs de l'AIGA sont appelés Divisions et Groupements interdivisions, comme suit:

- Division I: Champs magnétiques internes
- Division II: Phénomènes aéronomiques
- Division III: Phénomènes magnétosphériques
- Division IV: Vent solaire et champ magnétique interplanétaire
- Division V: Observatoires, instrumentation, levés et analyse
- Commission interdivision: Histoire
- Commission interdivision: Pays en développement

Règlement 2 Rôle et structure d'un Groupement constitutif

- 2.1 Chaque Division ou Commission interdivision propose au Conseil exécutif ses propres rôle, structure et mode de fonctionnement, qui doivent être approuvés par le Conseil exécutif.
- 2.2 Le rôle et l'efficacité de chaque Division et Commission interdivision sont examinés par le Conseil exécutif durant chaque Assemblée générale ordinaire.

Règlement 3 Désignation des responsables de Groupements constitutifs

- 3.1 Les responsables de chaque Division et Groupement interdivision sont nommés par le Conseil exécutif pour une Période, sous réserve de ratification par une Conférence des délégués. D'éventuelles vacances survenant dans l'interim sont pourvues par une personne mandatée par le Conseil exécutif.
- 3.2 Pour que leur nomination devienne effective, les responsables de Division et de Groupements interdivision doivent exprimer par écrit au (à la) Président(e) leur accord.
- 3.3 Les responsables de Division et de Groupements interdivisions peuvent nommer, pour chaque Période, des Rapporteurs, responsables de Groupes de travail, ainsi que les responsables d'autres éventuelles sous-divisions.
- 3.4 Bien qu'il soit reconnu que les principaux critères pour la nomination de responsables doivent être les compétences scientifiques et administratives des candidats, le Conseil exécutif et les responsables de Divisions et de Groupements interdivisions doivent s'assurer que, là où c'est possible, ces nominations conduisent à une représentation géographique diversifiée.

Règlement 4 Membres honoraires de l'AIGA

- 4.1 Une personne ayant rendu un service remarquable à l'AIGA peut être élue « Membre honoraire de l'AIGA » par une Conférence des délégués. Le Conseil exécutif sélectionne les candidats et présente leurs noms à une Conférence des délégués.
- 4.2 La liste des noms des Membres honoraires de l'AIGA est publiée dans les publications où figure la structure de l'AIGA et les Membres honoraires de l'AIGA reçoivent à ce titre gratuitement du ou de la Secrétaire-général les 'IAGA News', les Transactions et les brochure publiant programmes et résumés AIGA

II. ADMINISTRATION

Règlement 5 Assemblées générales extraordinaires

- 5.1 Le (la) Président(e) peut à tout moment, avec l'approbation du Conseil exécutif, convoquer une Assemblée générale extraordinaire.
- 5.2 Le (la) Président(e) doit convoquer une Assemblée générale extraordinaire si il en reçoit la demande d'au moins vingt cinq Pays membres
- 5.3 Une telle Assemblée générale extraordinaire doit se tenir dans les neuf mois suivant la demande.
- 5.4 Une Assemblée générale extraordinaire a les mêmes pouvoirs et est soumise aux mêmes règles qu'une Assemblée générale ordinaire.

Règlement 6 Annonce d'une Assemblée générale

Le ou la Secrétaire-général transmettra aux Pays membres, au moins neuf mois à l'avance, notification de la date et du lieu d'une Assemblée générale ordinaire ou d'une Assemblée scientifique. Le délai est de quatre mois dans le cas d'une Assemblée générale extraordinaire.

Règlement 7 L'ordre du jour d'une Conférence des délégués

- 7.1 Un ordre du jour provisoire d'une Conférence des délégués est préparé par le ou la Secrétaire-général et envoyé aux Correspondants nationaux de l'AIGA au moins deux mois avant l'ouverture de l'Assemblée.
- 7.2 L'ordre du jour provisoire comporte tous les points soumis par les Correspondants nationaux de l'AIGA pour discussion durant la Conférence des délégués, ainsi que les questions inscrites par le Conseil exécutif à l'ordre du jour provisoire. Des points supplémentaires, qui n'ont pas été ainsi notifiés, peuvent uniquement être discutés après approbation par la Conférence des délégués.

Règlement 8 Participation à une Conférence des délégués

- 8.1 Les Conférences des délégués sont ouvertes au public. Tout participant qui n'est pas délégué peut participer à une discussion si le (la) Président(e) l'y autorise.
- 8.2 Le (la) Président(e) peut, à sa propre initiative ou sur demande d'un Correspondant national de l'AIGA, inviter des représentants d'organisations scientifiques ou des personnes individuelles à participer à titre consultatif à une Conférence des délégués.

Règlement 9 Vote durant une Conférence des délégués

- 9.1 Un Pays membre qui n'est pas représenté à une Conférence des délégués peut voter par correspondance sur toute question déclarée être de nature administrative ou financière, à l'exception de l'élection du Conseil exécutif, pourvu que (i) la question ait été clairement définie sur l'ordre du jour définitif distribué par avance aux Pays membres, (ii) le contenu de la question n'ait pas été changé et (iii) le vote en question ait été reçu par le ou la Secrétaire-général avant la réunion.
- 9.2 Avant un vote, le (la) Président(e) décide si le vote par correspondance est possible. La décision du (de la) Président(e) peut être contestée selon les procédures décrites dans l'article *St-12*.

Règlement 10 Représentation d'un Délégué national

Un délégué national d'un Pays membre peut déléguer un autre Délégué de son pays pour être son représentant ou sa représentante pour tout ou partie d'une Conférence des

délégués. Si le délégué national est dans l'incapacité de le faire, les Délégués accrédités de ce Pays membre peuvent désigner un de leurs membres pour représenter le Délégué national. En tout cas, le ou la Secrétaire-général est informé par écrit de cette désignation avant la Conférence des délégués pour laquelle le représentant du Délégué national est mandaté.

Règlement 11 Propositions de candidature et élection du Conseil exécutif

- 11.1 Au moins six mois avant le début d'une Assemblée générale ordinaire, le (la) Président(e), en consultation avec le Conseil exécutif, nomme un Comité de nomination composé d'un(e) Président(e) et de quatre membres. Les membres du Conseil exécutif ne peuvent être nommés au Comité de nomination.
- 11.2 Le Comité de nomination propose au moins un candidat pour chaque poste du Conseil exécutif et avise le ou la Secrétaire-général de telle sorte que ces propositions soient diffusées auprès des Correspondants nationaux de l'AIGA au moins deux mois avant l'élection.
- 11.3 Le Correspondant national de chaque Pays membre de l'AIGA peut proposer d'autres candidats en écrivant au (à la) Président(e) du Comité de nomination au moins un mois avant l'élection. Pour être recevable en tant que candidature, chaque proposition individuelle doit être soutenue par au moins trois Pays membres et doit être accompagnée de l'accord écrit du candidat proposé. La liste combinée des candidats doit être rendue publique au moins un jour avant l'élection.
- 11.4 La composition du Conseil exécutif doit refléter une représentation diversifiée du point de vue géographique et des disciplines scientifiques.
- 11.5 Les membres du Conseil exécutif sont élus à bulletins secrets. Parmi les Délégués présents, le (la) Président(e) désigne deux scrutateurs pour l'élection. Les scrutateurs ne sont pas membres du conseil exécutif, ni du Comité de nomination, ni candidats à l'élection.
- 11.6 Les scientifiques de pays qui ne sont pas Pays membres de l'AIGA ou qui sont représentés par des Organismes adhérents qui ont le statut d'Observateur ou qui sont Membres associés depuis plus de deux ans (ainsi qu'il est défini dans les statuts de l'UGGI) n'ont pas le droit d'avoir de mandats électifs au sein de l'AIGA.

Règlement 12 Réunions du Conseil exécutif

- 12.1 Les réunions du Conseil exécutif sont convoquées par le (la) Président(e), ou conjointement par les deux Vice-présidents en l'absence du (de la) Président(e). Durant une réunion du Conseil exécutif, aucun membre ne peut se faire représenter. Les décisions du Conseil exécutif sont valides si au moins la moitié de ses membres sont présents. Toutes les décisions du Conseil exécutif sont prises à la majorité simple du nombre total des membres présents ayant pris part au vote. En cas d'égalité, la décision appartient au (à la) Président(e).
- 12.2 Lorsque l'importance et l'urgence d'une décision le justifient, un vote par correspondance peut être organisé par le ou la Secrétaire-général sur demande du (de la) Président(e). Les règles de vote définies stipulées dans les présents Statuts et Règlement intérieur s'appliquent alors.
- 12.3 Le (la) Président(e) peut, à sa propre initiative ou sur demande d'un autre membre du Conseil exécutif ou d'un Correspondant national de l'AIGA, inviter des représentants d'organisations scientifiques ou des personnes individuelles à participer à titre consultatif à une réunion du Conseil exécutif.
- 12.4 Des propositions concernant l'ordre du jour de réunions du Conseil exécutif peuvent être soumises par des membres

de ce Conseil, par des responsables de Division ou de Groupements interdivision, ou par des Correspondants nationaux de l'AIGA ; elles doivent être entre les mains du ou de la Secrétaire-général au mois un mois avant la réunion. L'ordre du jour définitif, après approbation par le (la) Président(e), est distribué aux membres du conseil exécutif au moins une semaine avant la réunion.

Règlement 13 Responsabilités du Conseil exécutif

Outre les responsabilités précisées dans les articles *St-7* et *St-8* et *RI-2*, *RI-3*, *RI-4*, *RI-5*, *RI-7*, *RI-11* et *RI-12*, et sous réserve de directives d'une Conférence des délégués, le Conseil exécutif a le pouvoir de :

- (a) agir en tant que comité d'organisation pour tout assemblée, symposium et réunion de l'AIGA, ou déléguer cette responsabilité à d'autres personnes en procédant aux nominations nécessaires;
- (b) confier à des commissions spéciales ou à des personnalités la préparation de rapports sur des sujets dans le domaine de compétence de l'Association;
- (c) inviter à être, ou nommer Correspondant local de l'Association des personnes ou institutions appartenant à des pays qui ne sont pas membres de l'Association.

Règlement 14 Responsabilités du (de la) Président(e)

Les responsabilités du (de la) Président(e) de l'AIGA sont :

- (a) de représenter l'AIGA au sein du Comité exécutif de l'UGGI;
- (b) de représenter l'AIGA dans ses relations avec les Correspondants nationaux de l'AIGA, d'autres Associations de l'UGGI, et d'autres membres du CIUS;
- (c) représenter, ou nommer un représentant de l'AIGA pour des réunions, des conférences ou des fonctions où une représentation formelle est nécessaire ou souhaitable;
- (d) convoquer les Conférences des délégués et les réunions du Conseil exécutif, et présider ces réunions;
- (e) présenter à une Conférence des délégués, durant chaque Assemblée, un rapport sur l'activité scientifique de l'Association.

Règlement 15 Représentation du (de la) Président(e)

Si le (la) Président(e) ou n'est pas disponible, le Conseil exécutif désigne un des Vice-présidents pour présider une Conférence des délégués ou une réunion du Conseil exécutif, et un des Vice-présidents ou le (la) Secrétaire-général pour représenter le (la) Président(e) à une réunion du Comité exécutif de l'UGGI conformément au Règlement intérieur de l'UGGI. Le (la) Président(e) peut désigner un des Vice-présidents pour agir en son nom pour toute autre fonction, réunion ou conférence où une représentation formelle de l'AIGA est nécessaire ou souhaitable.

Règlement 16 Responsabilité du (de la) Secrétaire-général

Les responsabilités du ou de la Secrétaire-général sont :

- (a) de servir comme secrétaire de l'AIGA, d'organiser les Assemblées conformément aux instructions du Conseil exécutif, de préparer les réunions du Conseil exécutif, et de préparer et diffuser rapidement les ordres du jour et les minutes des Conférences des délégués et des réunions du Conseil exécutif;
- (b) de gérer les affaires scientifiques et administratives de l'Association, de se charger de la correspondance,

et de mettre à jour et assurer la conservation des archives de l'Association;

- (c) d'informer les membres du Conseil exécutif durant l'intervalle entre ses réunions de tout sujet important concernant l'Association;
- (d) de conseiller le (la) Président(e) durant les réunions du Comité exécutif de l'UGGI;
- (e) d'encaisser et d'être responsable des fonds qui peuvent être alloués à l'Association par l'UGGI, ou reçus de toute autre source ; de répartir ces fonds conformément aux décisions des Conférences des délégués ou aux instructions du Conseil exécutif ; de tenir les comptes de toutes les recettes et dépenses et de soumettre ces comptes, vérifiés par un comptable compétent, pour examen par la Commission des finances nommée conformément aux dispositions de l'article *St-11*;
- (f) de préparer le Programme de chaque Assemblée ainsi qu'un rapport sur les résultats, et d'en organiser la publication;
- (g) de publier un journal interne de l'Association (tel que *IAGA News*) contenant les informations d'intérêt général pour l'Association;
- (h) de préparer pour chaque Assemblée la liste des Délégués nationaux;
- (i) d'accomplir toutes autres fonctions qui peuvent lui être confiées par le (la) Président(e) ou le Conseil exécutif.

III. FINANCE

Règlement 17 Affectation budgétaire

Dans le budget prévisionnel préparé par le (la) Secrétaire-général et approuvé par le Conseil exécutif, ainsi qu'il est mentionné dans l'article *St-10*, il est possible d'affecter les fonds attendus à :

- la gestion du secrétariat de l'Association;
- des dispositions administratives en vue d'Assemblées et de réunions du conseil exécutif;
- la publication sur support papier ou par voie électronique des *IAGA News*, des *IAGA Transactions*, de bulletins d'indices géomagnétiques pour lesquels l'AIGA a la responsabilité principale, ou de publications spécifiques;
- le soutien au (à la) Président(e) pour participer aux réunions du Comité exécutif de l'UGGI, et aux responsables de l'AIGA pour exercer des charges comme représentants de l'AIGA lorsque ces responsables ne peuvent obtenir par ailleurs le soutien nécessaire;
- le soutien aux responsables de l'AIGA, organisateurs de réunions, et scientifiques pour participer à des réunions officielles de l'AIGA ou des réunions scientifiques soutenues par l'AIGA lorsque le Conseil exécutif juge que la participation des ces personnes est essentielle au succès de la réunion et que ces personnes ont attesté par écrit qu'elles ne peuvent obtenir par ailleurs le soutien nécessaire;
- des dépenses administratives mineures demandées par des responsables de Division, et de Groupements constitutifs associés ou Inter-division qui ont attesté par écrit qu'ils ne peuvent obtenir par ailleurs le soutien nécessaire;
- toute activité non mentionnée ci-dessus dont le soutien concourt à la réalisation des objectifs de l'Association.

Adoptés le 28 juillet 1999 durant la XXII^{ème} Assemblée Générale de l'UGGI, Birmingham, Royaume Uni.

STATUTES & BY-LAWS OF THE INTERNATIONAL ASSOCIATION OF HYDROLOGICAL SCIENCES

(Revised July 1999)

STATUTES OF IAHS

THE OBJECTIVES OF THE ASSOCIATION

- 1.1. To promote the study of Hydrology as an aspect of the earth sciences and of water resources;
 - to study the hydrological cycle on the Earth and the waters of the continents; the surface and groundwaters, snow and ice, including their physical, chemical and biological processes, their relation to climate and to other physical and geographical factors as well as the interrelations between them;
 - to study erosion and sedimentation and their relation to the hydrological cycle;
 - to examine the hydrological aspects of the use and management of water resources and their change under the influence of man's activities;
 - to provide a firm scientific basis for the optimal utilization of water resources systems, including the transfer of knowledge on planning, engineering, management and economic aspects of applied hydrology.
- 1.2. To provide for discussion, comparison, and publication of research results.
- 1.3. To initiate, facilitate, and coordinate research into, and investigation of, those hydrological problems which require international cooperation.
2. The Association is a constituent body of the International Union of Geodesy and Geophysics (IUGG). The Association is subject to those Articles of the Statutes and Bye-laws of the Union that apply to associations and also to these Statutes.
3. Any country adhering to the Union also adheres to the Association, and is entitled to send delegates and otherwise to participate in its work. All scientific meetings of the Association or of its components are open to such delegates.
4. The Association performs its activities in the framework of the International Council for Science (ICSU) and IUGG, in cooperation with the United Nations and its specialized agencies and through direct contacts with other international organizations.
5. The Association shall comprise: the Plenary Session, the Bureau of the Association, the Scientific Commissions, the Panels and Working Groups and the International Association of Hydrological Sciences Limited. The Association shall maintain contact with the several adhering countries through their National Representatives or National Committees (often subcommittees or sections of the IUGG National Committees) and Regional Committees.

Scientific Commissions: Units of the Association having defined scientific responsibilities in specific hydrological fields or subjects. Divisions are corresponding units of the Scientific Commissions.

Panels or Working Groups: Ad hoc units to report on specific problems, either scientific or administrative.

National Committees: National Committees of IAHS are administrative bodies for maintaining contacts with the Association. They may include representatives to the Scientific Commissions of IAHS.

National Representatives: Each member country of IUGG shall appoint a National IAHS Representative who is responsible for maintaining contact with the Association, taking part in the work of the National Committee of IAHS, if one such is established.

Regional Committees: Regional Committees are administrative bodies which examine subjects of particular concern within specific regions.

The International Association of Hydrological Sciences Limited: This is a UK Registered Charity having as part of its Memorandum and Articles of Association objects which are identical to those of this Association and coming within the framework of ICSU and IUGG.

Individual Members: Even though membership of IAHS is by country, individuals may request to be registered for so-called individual membership. To qualify for such membership an individual must work in one or more fields of hydrology and endeavour to participate in IAHS activities. The individual members are not permitted to vote on administrative matters.

PLENARY SESSION

6. A Plenary Session of the Association shall be convened in accordance with the Bye-laws of the Union. At least one Plenary Session of the Association shall be held during a General Assembly of the IUGG and during a Scientific Assembly of the Association. Each adhering country may be represented by one or more delegates to the Plenary Session.
 - 6.1. The Plenary Session has final authority on questions of a scientific character.
 - 6.2. The Plenary Session shall consider the state of hydrological sciences, the trends in their development, and questions relating to the organization of symposia on important programmes, taking into consideration the appropriate programmes of other international organizations.
 - 6.3. Each participant present at the Plenary Session shall have one vote on scientific matters.
7. The final authority of the Association in all matters of administration and finance shall be vested in the Plenary Administrative Session of the Association.
 - 7.1. The Plenary Administrative Session shall consist of the President, the President-Elect or immediate Past-President, the Vice-Presidents, the Secretary General, the Treasurer, the Editor, the President or other designee of each Scientific Commission in existence at the time, the Chairman of IAHS Limited and one voting delegate from each adhering country, appointed by that country to vote in the Plenary Administrative Session.

A quorum shall consist of the President (or Vice-President acting as President), the Secretary General, or his deputy, and voting delegates from at least 10 countries.

- 7.2. Voting in the Plenary Administrative Session shall be by countries, each country having one vote, with the provision that it has voting rights in IUGG at that time. This voting may also be by mail but if the vote has been by mail then the country cannot vote at the Plenary Session again. Only those officers of the Association and its Scientific Commissions who are also voting delegates of their countries may vote.

- 7.3. The Plenary Administrative Session, during the General Assembly of the IUGG, shall elect for the Association, in accordance with the Bye-laws, the President-Elect, three Vice-Presidents, the Secretary General, the Treasurer, and such other elective officers as may be deemed necessary.

The election shall be held during the IUGG General Assembly, in accordance with Articles 7.1, 7.2 and 7.6.

The period of office for all Association officers except the President, shall be the interval between elections at two successive IUGG General Assemblies.

The President-Elect shall become President, and the President shall become immediate Past-President, two years after the elections at the IUGG General Assembly.

If a Scientific Assembly is held during the second year after the elections, the President-Elect shall become President at the beginning of the Scientific Assembly.

The term of immediate Past-President shall be from the time the new President takes office to the next election of a President-Elect. At any time there shall be in the Bureau either a President and President-Elect or a President and a Past-President.

The President and Vice-Presidents may not be elected to two successive terms of the same office.

The Secretary General and the Treasurer shall be eligible for re-election, but not for more than two additional terms.

The Editor shall be appointed by the Bureau, and shall be eligible for re-appointment without limit.

The President-Elect shall assume the office of President if this office becomes vacant. If there is no President-Elect the Bureau shall appoint one of the Vice-Presidents to be President.

If the office of the Secretary General or that of the Treasurer or that of the Editor shall become vacant between IUGG General Assemblies, acting officers shall be appointed by the President to serve the remainder part of the term.

- 7.4. The Plenary Administrative Session has the power to form and discontinue Scientific Commissions. Their terms of reference shall be included in the Bye-laws of the Association.

The Plenary Administrative Session during the IUGG Assembly shall be informed of the President-Elect, three Vice-Presidents and Secretary elected during the Plenary Administrative Session of each of the Scientific Commissions.

The office of President-Elect of each Scientific Commission shall be established under the same terms as outlined in Article 7.3 for the Association.

The Presidents of the Scientific Commissions may not be re-elected to two successive terms of the same office. The Vice-Presidents and the Secretary shall be eligible for re-election but for not more than one additional term.

The Scientific Commissions have the power to fill vacancies that may occur between elections.

- 7.5. The Plenary Administrative Session has the power to form and discontinue Regional Committees, which may be formed on the initiative of several National Committees or National Representatives. Their Officers shall be elected by those National Committees, or National Representatives. Regional Committees shall examine hydrological subjects of particular concern to a specific region, and may conduct regional meetings on such subjects. Regional meetings shall be open to all adhering countries, and the Scientific Commissions may designate a representative to appear on their behalf at these meetings. Each Regional Committee may propose a set of regulations for its organization and governance for approval by the Plenary Administrative Session of the Association.

- 7.6. The Plenary Administrative Session may elect an Honorary President, who shall serve life or until such time as he/she resigns from this office. The Honorary President may participate as a non-voting member in any Association meeting, including those of the Bureau, and may be requested by the Bureau to undertake specific tasks in support of the Objectives of the Association.

- 7.7. In questions involving finance, voting in the Plenary Administrative Session shall be as in Article 7.2, except that upon the request of two voting delegates, the number of votes for each country shall be one greater than the number of its category of membership in the Union as defined in the Statutes of the Union.

- 7.8. An adhering country not represented at a Plenary Administrative Session may forward its vote on any pertinent item on the agenda, including elections of Association officers, by mail.

- 7.9. Voting by post on administrative matters between Plenary Sessions of the Association can be authorized by the Bureau.

THE BUREAU

8. The Bureau of the Association shall consist of the President, the President-Elect or immediate Past-President, three Vice-Presidents, the Secretary General, the Treasurer, the Editor and Presidents of the Scientific Commissions in existence at the time and the Chairman of the International Association of Hydrological Sciences Limited. The immediate Past-President shall remain a Bureau member during the period between the end of his/her office and the election of a new President-Elect. The President shall convene the Bureau at least every other year to guide the affairs of the Association.

PRESIDENT, SECRETARY GENERAL, TREASURER AND EDITOR

9. The President shall be the executive officer of the Association and shall direct its affairs in accordance with

the decisions of the Plenary Session of the Association. The President shall be assisted by the Vice-Presidents.

10. The Secretary General, in consultation with the President, shall manage the business of the Association, conduct the correspondence, preserve the official documents and administrative records. The Bureau may authorize the Secretary General to employ administrative and secretarial personnel to assist him/her in the performance of his/her duties to the Association. The Secretary General shall also take any action necessary to ensure that the Objectives of the Association are fulfilled in a manner which complies with the relevant Law governing administration, taxation, Contract and Tort or their equivalent in any country where the Association is operational including the appointment of a person or corporation if required to protect and represent the Association in any such matters and he/she shall be indemnified by the Association in respect of the costs of any such action.
11. The Treasurer, or acting Treasurer, shall collect the funds of the Association and disburse them in accordance with the decisions of the Plenary Session of the Association and the Bureau. He shall maintain records of all financial transactions of the Association and submit annual reports thereon to the Bureau as required by the Statutes and By-laws of IUGG. In agreement with the Secretary General he shall arrange for the subscriptions, sales, and storage of the publications of the Association.
 - 11.1. The funds of the Association shall be invested in accounts of the Association. They shall be at the disposal of the Treasurer and the Secretary General as may be deemed necessary and as specified in Article 11, but provisions shall be made to enable the President to transfer the funds or part of them to an acting Treasurer appointed according to Article 7.3.
12. The Editor shall prepare for publication by the Association original papers, reviews and other material in a form in accordance with the decisions of the Plenary Session and the Bureau.

COMMISSIONS

13. The following provisions shall govern Scientific Commissions that are created under Article 7.4.
 - 13.1. The Scientific Commissions shall keep abreast of their fields of hydrology and determine the trends in research on the most urgent problems of hydrology that are of common interest to many countries. The Scientific Commissions shall study the questions voted by their Plenary Session.
 - 13.2. The Scientific Commissions shall participate actively in the preparation of symposia on appropriate scientific problems.
 - 13.3. The Scientific Commissions shall be styled "International Commission on ...".
 - 13.4. The National Committee (or National Representative) for IAHS of each adhering country may designate one representative on each Scientific Commission and on each Regional Committee with which it desires to affiliate. Such representatives may vote on all administrative and scientific matters before the Scientific Commission or Regional Committee and may correspond directly with the Officers of a Commission or such Committee on all matters of concern to that Commission or such Committee. All participants present at a meeting of a Commission or such Committee may vote on scientific matters.

- 13.5. While the regulations for all scientific commissions should be as similar as possible, each Scientific Commission may propose a set of regulations for its organization and governance for approval by the Plenary Administrative Session of the Association.

- 13.6. The Scientific Commissions may establish Divisions and ad hoc working groups to report on specific problems.

PANELS, WORKING GROUPS AND RAPPORTEURS

14. The Plenary Session or the Bureau may create panels or working groups and appoint rapporteurs to undertake either:
 - a. ad hoc scientific programmes; or
 - b. activities of a pro tempore regional nature; or
 - c. specific administrative or organizational tasks.

The Chairman and members of all such groups shall be appointed by the President, to whom they shall report. Such groups shall exist only during the term between two successive IUGG General Assemblies.

IAHS LIMITED

15. The International Association of Hydrological Sciences Limited.
 - 15.1. The International Association of Hydrological Sciences Limited shall deal with those matters set out in its Memorandum and Articles of Association (a copy of which shall be held by the Secretary General) and is a registered Charity in the United Kingdom.
 - 15.2. Membership of the Limited Company is restricted to Individual Members of the Association. The Limited Company will deal inter alia with the IAHS publishing programme including the arrangements for the Hydrological Sciences Journal.
 - 15.3. The International Association of Hydrological Sciences Limited shall have as its Board the Secretary General and those persons appointed by the President. The Chairman of the Limited Company will report to the President. Because of requirements under English Law, at least half the Board of the Limited Company, who shall also be Directors, must be ordinarily resident in the United Kingdom.
 - 15.4. For the purpose of continuity of administration of the Limited Company, the President shall have absolute discretion regarding the appointment of the Chairman and the Board.

BY-LAWS: AMENDMENTS

16. Within the framework of these Statutes, the Plenary Administrative Session of the Association shall have the power to adopt or amend Bye-laws by a simple majority.
17. Proposals by adhering countries for a change of any Article of the Statutes must reach the Secretary General at least six months before the date of the meeting at which they are considered by the Plenary Administrative Session of the Association. The Secretary General shall notify all adhering countries of any proposed changes at least four months before the named date.
18. The Articles of these Statutes may be changed only by a majority of two-thirds of the votes cast at a meeting of the Plenary Administrative Session of the Association by voting members who are present or who vote by post, provided that the total number of favourable votes is not less than one-half the number of the members of the

Plenary Administrative Session of the Association eligible to vote.

19. The Statutes are prepared in English and French, and the English text shall be considered the authoritative text. Questions of interpretation as between the texts shall be decided by the President.

BY-LAWS OF IAHS

By-laws

1. The following Scientific Commissions have been established in accord with Article 7.4 of the Statutes:
- International Commission on Surface Water;
 - International Commission on Groundwater;
 - International Commission on Continental Erosion;
 - International Commission on Snow and Ice;
 - International Commission on Water Quality;
 - International Commission on Water Resources Systems;
 - International Commission on Remote Sensing;
 - International Commission on Atmosphere-Soil-Vegetation Relations;
 - International Commission on Tracers.

The Commissions shall follow the Regulations of the Scientific Commissions. Commission-specific modifications of these regulations are subject to approval by the Plenary Administrative Session of the Association and shall become part of the By-laws.

All Commissions will be concerned with natural processes and these processes as modified by human activities or with processes, technologies and applications. Relations to the environment will be considered as appropriate.

Whenever Scientific Commissions are referred to in the By-laws, it implies "International Commissions".

2. The several Scientific Commissions shall prepare scientific reviews of the state of research in their respective fields of hydrology, noting achievements and trends, with particular emphasis on significant problems for attack. The reports should be submitted in English or in French and include a summary in the other language. The report shall reach the Secretary General at least four months before the Plenary Session of the Association, for distribution among the officers of the Association including those of the several Scientific Commissions and among the National Committees, and for publication in the reports of the Plenary Session of the Association. The President of the Association shall introduce these reviews in his address to the Plenary Session of the Association, together with his recommendations as to the course of research.
3. The Scientific Commissions shall meet at the IUGG General Assemblies and Scientific Assemblies of the Association unless authorized otherwise by the Bureau. A Scientific Commission may also schedule other meetings under the regulations it adopts according to Statutes Article 13.6.
4. The Scientific Commissions may invite advisors from non-adhering countries to participate in the work of the Scientific Commissions. These advisors may not vote.

5. Each Scientific Commission shall show on its stationery or other formal documents its identification with the International Association of Hydrological Sciences.

NOMINATIONS AND VOTING FOR OFFICE

6. The Bureau shall establish a Nomination Panel of not less than three members at least 10 months before an IUGG General Assembly to receive and consider suggestions and prepare nominations for the President-Elect, the three Vice-Presidents, the Secretary General and the Treasurer.
7. At least nine months before an IUGG General Assembly the Secretary General shall inform all National Committees of the membership of the Nomination Panel, asking them to send their nominations to its Chairman not later than six months before the General Assembly in order to be considered by the Panel. On the basis of available nominations from the National Committees, the IAHS Bureau and from the Scientific Commissions, the Panel shall prepare a list of candidates, seeking to achieve a reasonable balance in their geographical and professional distribution.

Each nomination for office must include a résumé of the candidate's qualifications relevant to the office for which the candidate is nominated. A signed statement of the candidate's willingness to stand for office must also be provided. The nomination shall not be considered without submission of the résumé and consent form.

A person may be a candidate for more than one office except the candidate for President-Elect who may not be a candidate for any other office of the Association. No one may hold more than one office at the same time.

The list submitted for voting shall contain the candidates proposed by the Nomination Panel and mention the names of all other nominees submitted.

The voting on the list shall be by the Plenary Administrative Session of the Association or by mail according to Article 7.2 of the Statutes.

- 6.1. Each of the Scientific Commissions shall establish a Nomination Group of not less than three members at least 10 months before an IUGG General Assembly to prepare nominations of Commission officers. At least nine months before an IUGG General Assembly the Secretary General shall inform all National Committees of the membership of these groups, asking them to send nominations to the Chairman of the Nomination Panel not later than six months before the General Assembly. The Chairman of the Panel shall furnish each Nomination Group with the names of candidates appropriate to each Scientific Commission. On the basis of available nominations from the National Committees and respective Scientific Commissions each Nomination Group shall then prepare a list of candidates for Scientific Commission officers. The preparation of the list shall be done in consultation with the Panel Chairman.

The nominations for Commission officers shall follow the same procedure as that for the Bureau officers (Article 6) except that the nominee for President-Elect may be a candidate for more than one office.

The voting on this list shall be by the Plenary Administrative Session of the Scientific Commissions or by mail according to Article 7.2 of the Statutes. The results shall be given to the Chairman of the Nomination Panel who shall draw up a list of Scientific Commission Officers

to be announced at a Plenary Session of the Association in Administrative Session.

- 6.2. The list of candidates for Association and Commission Officers shall normally contain more than one name for each office. The Chairman of the Nomination Panel shall distribute the list to the National Committees at least three months before an IUGG General Assembly.

The list submitted for voting shall include both the candidates proposed and the names of all the other nominees submitted.

- 6.3. Voting on the list of candidates for both Association and Scientific Commission officers shall be done by secret ballot. To be elected, each candidate must obtain a simple majority of votes. For those offices not filled in the first round of voting, a second round shall be held on the two highest ranking candidates of the first round. In the case of a draw in the second round, the President shall decide

NATIONAL COMMITTEES

7. The National Committees or the National Representatives shall disseminate information on the Association within their countries and shall solicit papers for symposia or for publication in the Hydrological Sciences Journal.
8. National Committees shall be invited to present their views on hydrological and water resources research and on matters relating to the management of the Association to the Bureau and the Plenary Sessions, as a contribution to the discussion on future activities of the Association.
9. Where the National Committee for IAHS has not appointed or designated a person or persons to cast its vote as specified by the Statutes in the Plenary Session or at a meeting of a Scientific Commission or other committee, the delegates present are invited to select one of their number for this purpose.
10. The Association should encourage the formation of National Committees for hydrology in all countries that adhere to the Union. Where such National Committees do not exist, de facto or de jure delegates who have attended General Assemblies and symposia of IAHS are invited to petition the National Committee for IUGG to form a national group for discussion of questions before IAHS or its Scientific Commissions or to designate delegations to a General Assembly.
11. National Committees shall designate a delegate to the Plenary Sessions of the Association and each of the Scientific Commissions. The names of such delegates should be given to the Secretary of the pertinent body at least one day in advance of any Administrative Session.

AGENDA, SYMPOSIA AND PUBLICATIONS

12. The Bureau of the Association shall organize the agenda for the Plenary Sessions of the Association.
13. Suggestions for the agenda of the Plenary Session of the Association must reach the Secretary General at least three months before the date of the meeting. However, a question which has not been placed on the agenda may be discussed if a proposal to that effect be approved by two-thirds of the votes of the delegates to the Plenary Session.
14. A Scientific Assembly may be held once during the four-year period between the General Assemblies of IUGG.

Guidelines for organizing symposia

15. Symposia for which the Association has primary responsibility (referred to as IAHS symposia in this By-law) should meet the following conditions and be accepted by the Bureau:
 - (i) a subject having an important role in the development of hydrology;
 - (ii) proposed by a National Committee or by officers of the Association or of its Scientific Commissions;
 - (iii) a member country expressing readiness to serve as host and presenting evidence of adequate support.
- 15.1. IAHS symposia (with subject outline) should be announced by the Secretary General not later than 18 months before the date of the symposium, by post to each National Committee and published in the Journal of the Association.
- 15.2. IAHS symposia are organized jointly with a relevant organization of the host country and may be supported by or organized in collaboration with other international organizations. Preference shall be given to those symposia where there is evidence of adequate national support.
- 15.3. The Association may support or take partial responsibility in symposia of other international organizations according to arrangements formulated through exchange of correspondence and approved by the Bureau.
16. The Editor is authorized to arrange for the publication of a periodic Journal to provide a line of communication with the National Committees and with the world hydrological community.

GENERAL

17. Scientific Commissions, Panels, Working Groups and the International Association of Hydrological Sciences Limited shall account to the Treasurer in January of each year on all funds received from the Association and from other sources for their activities and disbursed by them during the preceding year.
18. Corporate Subscribers: The Bureau of the Association is authorized to accept institutions with an interest in hydrology as Corporate Subscribers who, for an annual fee established by the Bureau, shall be entitled to receive a copy of each Journal published by the Association, a 20% discount on any IAHS publication other than the Journal, copies of all notices and information circulars, and to a listing in the Journal.
19. The President may invite representatives of the UN specialized agencies or other observers, advisors or consultants to attend Plenary Sessions or meetings of the Bureau, with voice but without vote.
20. The legal domicile of the Association shall be established by the Bureau.
21. The Secretary General shall publish the Statutes and By-laws at least once in each period between General Assemblies of the IUGG.
22. The Secretary General keeps a list of hydrologists who are willing and qualified to participate actively in the work of the Association. These hydrologists are designated as Individual Members of IAHS. The Secretary General will notify the Secretaries of the Scientific Commissions of the Individual Members interested in their respective Commission.

STATUTS & RÈGLEMENT INTÉRIEUR DE L'ASSOCIATION INTERNATIONALE DES SCIENCES HYDROLOGIQUES

(révisés en 1999)

STATUTS DE L'AISH

LES BUTS DE L'ASSOCIATION

- 1.1. Promouvoir l'étude de l'hydrologie en tant que partie intégrante des sciences de la terre et des ressources en eau;
 - Etudier le cycle hydrologique sur la Terre et les eaux des continents; les eaux superficielles et souterraines, les neiges et les glaces, de même que les processus physiques, chimiques et biologiques les concernant, leurs rapports avec le climat et avec d'autres facteurs physiques et géographiques de même que les interrelations existant entre elles;
 - Etudier l'érosion et la sédimentation et leurs relations avec le cycle de l'eau;
 - Examiner les aspects hydrologiques de l'utilisation et de la gestion des eaux ainsi que les modifications affectant les ressources en eau sous l'influence des activités de l'homme;
 - Fournir une base scientifique solide à l'utilisation optimale des systèmes de ressources en eau, comprenant le transfert de connaissances concernant la planification, l'ingénierie, la gestion et les aspects économiques de l'hydrologie appliquée.
- 1.2. D'offrir toutes facilités pour la discussion, la comparaison et la publication des résultats de la recherche.
- 1.3. De provoquer, de faciliter et de coordonner les recherches et études concernant des problèmes hydrologiques qui nécessitent une coopération internationale.
2. L'association est un des corps constituants de l'Union Géodésique et Géophysique Internationale (UGGI). Elle est régie par les articles des statuts et du règlement intérieur de l'union applicable aux diverses associations, ainsi que par les présents statuts.
3. Tout pays adhérent à l'union est aussi adhérent à l'association et est appelé à envoyer des délégués et à participer par tout autre moyen à ses travaux. Toutes les réunions scientifiques de l'association et de ses composantes sont ouvertes à ces délégués.
4. L'association exerce ses activités dans le cadre du Conseil International pour la Science (ICSU) et de l'UGGI, en coopération avec les Nations Unies et ses agences spécialisées et par contacts directs avec les autres organisations internationales.
5. L'association comporte : la session plénière, le bureau de l'association, les commissions scientifiques, les groupes d'experts et les groupes de travail et "The International Association of Hydrological Sciences Limited". L'association maintient le contact avec les divers pays adhérents par l'intermédiaire de leurs représentants nationaux ou de leurs comités nationaux (souvent sous-comités ou sections des comités nationaux de l'UGGI) et des comités régionaux.

Commissions scientifiques: Unités constitutives de l'association ayant des responsabilités scientifiques bien définies correspondant à des objets ou domaines

hydrologiques spécifiques. Les divisions sont à leur tour des unités constitutives pour les commissions.

Groupes d'experts ou groupes de travail: Unités constitutives de l'association créées à titre transitoire (ad hoc), en vue de soumettre un rapport sur des problèmes spécifiques, qu'ils soient scientifiques ou administratifs.

Comités nationaux: Les comités nationaux de l'AISH sont les organes administratifs permettant de maintenir le contact avec l'association. Ils peuvent inclure des membres des commissions scientifiques de l'AISH.

Représentants nationaux: chaque pays membre de l'UGGI nomme un représentant national à l'AISH. Ce représentant national a pour rôle de maintenir le contact avec l'association et de prendre part au travail du comité national de l'AISH quand il existe.

Comités régionaux: Les comités régionaux sont des organes administratifs qui examinent des sujets particuliers concernant des régions spécifiques.

The International Association of Hydrological Sciences Limited: Son statut juridique est celui d'une "Charity" déclarée au Royaume-Uni dont l'objet, exposé dans le sommaire et les articles de ses statuts, est identique à celui de la présente association et qui se situe dans le cadre du CIUS et de l'UGGI.

Membres individuels: bien que l'adhésion à l'AISH soit par pays, les individus eux-mêmes peuvent demander à être enregistrés comme membre individuel. Pour être candidat un individu doit travailler dans un ou plusieurs domaines de l'hydrologie et s'efforcer de participer aux activités de l'AISH. Les membres individuels n'ont pas droit au vote sur les questions administratives.

SESSION PLENIERE

6. Une session plénière de l'association doit être convoquée en accord avec le règlement intérieur de l'union. Au moins une session plénière doit être tenue lors d'une assemblée générale de l'UGGI ou d'une assemblée scientifique de l'association. Chaque pays adhérent peut être représenté par un ou plusieurs délégués lors d'une session plénière.
 - 6.1. La session plénière détient l'autorité suprême en matière de questions à caractère scientifique.
 - 6.2. La session plénière doit considérer la situation des sciences hydrologiques au moment de la réunion, les tendances de leur développement et les questions relatives à l'organisation des symposiums sur d'importants problèmes hydrologiques, en tenant compte des programmes appropriés des autres organisations internationales.
 - 6.3. Chaque participant présent lors d'une session plénière dispose d'une voix pour les questions scientifiques.
7. L'autorité suprême de l'association pour toutes les questions administratives ou financières est conférée à la session administrative plénière de l'association.

7.1. La session administrative plénière se compose du président, du président-élu ou du président sortant, des vice-présidents, du secrétaire général, du trésorier, de l'éditeur, du président ou d'un autre représentant désigné de chaque commission scientifique en activité au moment de la session, du président de "The IASH Limited" et d'un délégué de chaque pays adhérent, mandat, par ce pays pour voter en son nom lors de la session administrative plénière.

Pour qu'il y ait quorum, il est nécessaire que le président (ou le vice-président faisant fonction de président), le secrétaire général ou son suppléant et les délégués dot, s du droit de vote d'au moins dix pays soient présents.

7.2. Le vote en session administrative plénière a lieu par pays, chaque pays disposant d'une voix à la condition qu'il ait ses droits de vote à l'UGGI au moment du vote. Le vote peut aussi se faire par correspondance mais si le vote a été fait par correspondance le pays ne peut pas alors voter à nouveau lors de la session plénière. Seuls les titulaires de postes de responsabilité de l'association et de ses commissions scientifiques ayant été autorisés à voter par leur pays peuvent participer au vote.

7.3. La session administrative plénière, réunie durant l'assemblée générale de l'UGGI, élit pour l'association, selon le règlement intérieur, le président-élu, trois vice-présidents, le secrétaire général, le trésorier et tout autre titulaire de poste électif qui pourrait paraître nécessaire.

L'élection doit avoir lieu pendant l'assemblée générale de l'UGGI, selon les articles 7.1, 7.2 et 7.6.

La période de fonction de tout titulaire de poste de responsabilité, de l'association, à l'exception du président, couvre l'intervalle séparant les élections de deux assemblés, es générales successives de l'UGGI.

Le président-élu devient président et le président devient président sortant deux ans après les élections organisées lors de l'assemblée générale de l'UGGI.

Si une assemblée scientifique a lieu durant la seconde année suivant les élections, le président-élu devient président au d, but de l'assemblée scientifique.

La durée de la fonction de président sortant va du moment où le nouveau président occupe son poste jusqu'à la nouvelle élection d'un président-élu. A n'importe quel moment le bureau doit comporter soit un président et un président-élu soit un président et un président sortant.

Le président et les vice-présidents ne peuvent pas être élus pour deux mandats successifs au même poste.

Le secrétaire général et le trésorier sont rééligibles, le nombre de mandats supplémentaires étant limité à deux.

L'éditeur doit être désigné par le bureau et son mandat peut être prolongé sans aucune limitation de durée.

Le président-élu assume la charge de président si cette charge devient vacante. S'il n'y a pas de président-élu, le bureau doit désigner l'un des vice-présidents comme président.

Si les charges de secrétaire général, de trésorier ou d'éditeur deviennent vacantes entre deux assemblées

générales de l'UGGI, des responsables de remplacement doivent être désignés par le président pour remplir leurs fonctions jusqu'à la fin du mandat.

7.4. La session administrative plénière a le pouvoir de créer et de dissoudre les commissions scientifiques. Leurs attributions doivent être incluses dans le règlement intérieur de l'association.

La session administrative plénière réunie lors de l'assemblée de l'UGGI doit être informée de l'élection du président-élu, des trois vice-présidents et du secrétaire par la session administrative plénière de chaque commission scientifique.

La charge de président-élu de chaque commission scientifique doit être attribuée selon la même procédure que celle décrite à l'article 7.3 pour l'association.

Les présidents des commissions scientifiques ne peuvent pas être réélus pour deux mandats consécutifs à la même charge. Les vice-présidents et le secrétaire sont rééligibles mais seulement pour un mandat supplémentaire.

Les commissions scientifiques ont le pouvoir de combler les vacances qui peuvent survenir entre les élections.

Cet article autorise également la création de comités régionaux qui peuvent être créés à l'initiative de plusieurs comités ou représentants nationaux. Les membres de leur bureau doivent être élus par ces comités ou représentants nationaux.

7.5. La session administrative plénière peut ,lire un président honoraire qui exerce ses fonctions à vie ou jusqu'à ce qu'il ou elle démissionne de son poste. Le président honoraire peut participer en tant que membre sans droit de vote à n'importe quelle réunion de l'association incluant celle du bureau et peut être sollicitée par le bureau pour entreprendre des tâches spécifiques destinées à appuyer les buts de l'association.

7.6. Pour toutes les questions impliquant des problèmes financiers, le vote en session administrative plénière doit avoir lieu comme il est indiqué à l'article 7.2 sauf que sur la demande de deux délégués ayant capacité de vote, le nombre de voix pour chaque pays doit être égal à la valeur du numéro de sa catégorie de membre, tel que cela est défini dans les statuts de l'union, augment, d'une unité.

7.7. Un pays adhérent, non représenté à une session administrative plénière, peut voter par correspondance sur tout point de l'ordre du jour, incluant l'élection des membres du bureau de l'association.

7.8. Le bureau peut autoriser le vote par correspondance sur des questions administratives entre les sessions plénières de l'association.

LE BUREAU

8. Le bureau de l'association se compose du président, du président-élu ou du président sortant, des trois vice-présidents, du secrétaire général, du trésorier, de l'éditeur et des présidents des commissions scientifiques en activité et du président de "The International Association of Hydrological Sciences Limited". Le président sortant reste membre du bureau durant la période allant de la fin de sa fonction à l'élection du nouveau président-, lu. Le président doit convoquer le bureau au moins une fois par an pour conduire les affaires de l'association.

**PRESIDENT, SECRETAIRE GENERAL, TRESORIER
ET EDITEUR**

9. Le président est l'agent exécutif de l'association et il dirige les affaires selon les décisions de la session plénière de l'association. Le président doit être assisté des vice-présidents.
10. Le secrétaire général, en accord avec le président, gère les affaires de l'association, s'occupe de la correspondance, conserve les documents officiels et les archives administratives. Le bureau peut autoriser le secrétaire général à employer du personnel administratif et du personnel de secrétariat pour l'assister dans l'exécution de ses obligations vis-à-vis de l'association. Le secrétaire général doit aussi prendre toute disposition nécessaire à assurer que les objectifs de l'association sont réalisés en conformité avec les lois régissant l'administration, la fiscalité, les contrats et actes juridiques ou leur équivalent dans tout pays où l'association est en activité, ceci incluant la désignation d'un individu ou d'une personne morale, si nécessaire, pour protéger et représenter l'association dans ces domaines et son indemnisation par l'association eu égard au coût d'une telle action.
11. Le trésorier, ou le responsable de l'association faisant fonction de trésorier, doit rassembler les fonds de l'association et les répartir en accord avec les décisions de la session plénière de l'association et du bureau. Il doit conserver les relevés de toutes les transactions financières de l'association et soumettre des rapports annuels s'y référant au bureau, ainsi que cela est exigé par les statuts et le règlement intérieur de l'UGGI. En accord avec le secrétaire général, il doit prendre toutes dispositions utiles pour assurer les souscriptions, la vente et la mise en réserve des publications de l'association.
- 11.1. Les fonds de l'association doivent être placés sur les comptes de l'association. Ils doivent être à la disposition du trésorier et du secrétaire général si cela est jugé nécessaire et ainsi qu'il est spécifié à l'article 11, mais des dispositions doivent être prises pour permettre au président de transférer les fonds ou une partie de ceux-ci à un trésorier suppléant désigné selon l'article 7.3.
12. L'Editeur mettra au point, en vue de leur publication par l'association, les textes des documents originaux, des revues sur un sujet scientifique et d'autres matériaux, sous une forme qui soit en accord avec les décisions de la session plénière et du bureau.

COMMISSIONS

13. Les dispositions suivantes s'appliquent aux commissions scientifiques créées en vertu de l'article 7.4.
- 13.1. Les commissions scientifiques doivent se tenir au courant des derniers progrès de la recherche dans les domaines de l'hydrologie qui les concernent et dégager les tendances de la recherche sur les problèmes les plus urgents en hydrologie dont l'intérêt est commun à plusieurs pays. Les commissions scientifiques doivent étudier les questions votées par leur session plénière.
- 13.2. Les commissions scientifiques doivent participer activement à la préparation de symposiums sur des problèmes scientifiques appropriés.
- 13.3. Les commissions scientifiques seront désignées sous le nom de "Commission internationale de..."

13.4. Le comité national (ou le représentant national) pour l'AISH de chaque pays adhérent peut désigner un représentant pour chaque commission scientifique et comité régional auquel il désire s'affilier. De tels représentants peuvent voter sur toutes questions administratives et scientifiques étudiées par la commission scientifique ou le comité régional, et peuvent correspondre directement avec les titulaires de postes de responsabilité de cette commission ou de ce comité à propos de toute question intéressant cette commission ou ce comité. Tous les participants présents à une réunion d'une commission peuvent voter sur des matières scientifiques.

13.5. Chaque commission scientifique peut proposer à l'approbation de la session administrative plénière de l'association une série de réglementations pour sa propre organisation et son administration.

13.6. Chaque commission scientifique peut avoir des sous-commissions et des groupes de travail sur des sujets spécifiques.

**GROUPES D'EXPERTS, GROUPES DE TRAVAIL ET
RAPPORTURES**

14. La session plénière ou le bureau peut créer des groupes d'experts et des groupes de travail pour entreprendre:
 - a. la réalisation d'un programme scientifique ad hoc; ou,
 - b. une tâche temporaire de coopération de nature régionale; ou,
 - c. des tâches organisationnelles ou administratives spécifiques.

Le président et les membres de tels groupes doivent être nommés par le président auquel ils rendent compte de leurs activités. De tels groupes ne doivent exister que dans l'intervalle de temps entre deux assemblées générales successives de l'UGGI.

"THE IAHS LIMITED"

15. "The International Association of Hydrological Sciences Limited".
- 15.1. "The International Association of Hydrological Sciences Limited" doit s'occuper des questions exposées dans le sommaire et les articles de ses statuts de société (dont une copie doit être conservée par le secrétaire général). Son statut juridique est celui d'une "Charity" déclarée au Royaume-Uni.
- 15.2. La participation à la société est réservée à des membres individuels de l'association. La société s'occupera du programme de publication de l'AISH incluant les arrangements concernant le "Journal des sciences hydrologiques".
- 15.3. "The International Association of Hydrological Sciences Limited" doit comprendre parmi ses membres le secrétaire général ainsi que les personnes que nommera le président. Le président de la société doit rendre compte de ses activités au président de l'association. En raison des exigences de la loi anglaise, au moins la moitié des membres de la société, qui doivent en être administrateurs, doivent résider au Royaume-Uni.
- 15.4. Pour assurer la continuité de gestion de la société, le président aura toute latitude en ce qui concerne la nomination du président de la société et des membres.

REGLEMENT INTERIEUR - AMENDEMENTS

16. Dans le cadre des présents statuts, la session administrative plénière de l'association a le pouvoir d'adopter ou d'amender le règlement intérieur à la majorité simple.
 17. Les propositions formulées par les pays adhérents en vue de la modification d'un article quelconque des statuts doivent parvenir au secrétaire général au moins six mois avant la date de la réunion au cours de laquelle elles seront considérées par la session administrative plénière de l'association. Le secrétaire général doit, au moins quatre mois avant la date fixée, notifier à tous les pays adhérents toutes les propositions de modifications qu'il aura alors reçues.
 18. Les articles de ces statuts ne peuvent être modifiés qu'à la majorité des deux tiers des voix exprimées lors d'une réunion de la session administrative plénière de l'association par les délégués ayant droit de vote, présents à cette réunion ou votant par correspondance, à la condition que le nombre total de voix favorables ne soit pas inférieur à la moitié du nombre de membres de la session administrative plénière de l'association ayant la capacité de vote.
 19. Les statuts sont rédigés en anglais et en français, et le texte anglais fera autorité. Les problèmes d'interprétation qui peuvent intervenir entre les deux textes devront être réglés par le président.
2. Les diverses commissions scientifiques ont pour tâche de préparer des rapports scientifiques faisant le point sur l'état de la recherche dans les domaines de l'hydrologie qui leur sont propres; ils noteront les résultats obtenus et les tendances actuelles en insistant sur les points significatifs concernant l'approche des problèmes. Les rapports seront fournis en anglais ou en français et comporteront un sommaire dans l'autre langue officielle. Le rapport doit parvenir au secrétaire général au moins quatre mois avant la session plénière de l'association, pour distribution aux responsables de l'association, y compris ceux des différentes commissions scientifiques, ainsi qu'aux comités nationaux, et pour publication dans les rapports de la session plénière de l'association. Le président de l'association inclut ces rapports scientifiques dans sa communication à la session plénière de l'association, de même que ses recommandations concernant le développement de la recherche.
 3. Les commissions scientifiques se réunissent lors des assemblées générales de l'UGGI et lors des assemblées scientifiques de l'association, à moins que le bureau ne les ait autorisés à se réunir dans d'autres circonstances. Une commission scientifique peut aussi prévoir d'autres réunions suivant le règlement qu'ils peuvent adopter, conformément à l'article 13.6 des statuts.
 4. Les commissions scientifiques peuvent inviter des conseillers provenant de pays non adhérents à participer à leurs travaux. Ces conseillers ne peuvent pas voter.
 5. Chaque commission scientifique doit faire figurer dans l'en-tête de ses imprimés et autres formes de documents son appartenance à l'association internationale des sciences hydrologiques.

RÈGLEMENT INTÉRIEUR DE L'AISH

REGLEMENT INTERIEUR

1. Les commissions scientifiques suivantes ont été créées, conformément à l'article 7.4 des statuts.
 - Commission internationale des eaux de surface,
 - Commission internationale des eaux souterraines,
 - Commission internationale d'érosion continentale,
 - Commission internationale des neiges et glaces,
 - Commission internationale de la qualité des eaux,
 - Commission internationale des systèmes de ressources en eau,
 - Commission internationale de télédétection et télétransmission,
 - Commission internationale des relations sol-plante-atmosphère,
 - Commission internationale des traceurs.

Chaque commission devra suivre ses attributions. Les modifications des attributions de chaque commission doivent être approuvées par la session administrative plénière de l'association et doivent être jointes au règlement intérieur.

Toutes les commissions s'intéresseront aux processus naturels et aux modifications apportées à ces processus par l'action de l'homme et par l'application de technologies. Les relations avec l'environnement seront examinées dans chaque cas où il conviendra de le faire.

- 1.1. Chaque fois qu'il sera fait mention de commissions scientifiques dans le règlement intérieur il faudra comprendre "Commissions internationales".

SELECTION DES CANDIDATERES ET ELECTIONS AUX POSTES DE DIRECTION DE L'ASSOCIATION

6. Le bureau doit établir au moins dix mois avant l'assemblée générale de l'UGGI un comité de sélection des candidatures d'au moins trois membres, chargé de recevoir et d'étudier les suggestions et de sélectionner des candidatures pour le poste de président-élu, pour les trois postes de vice-président ainsi que pour les postes de secrétaire général et de trésorier.

Au moins neuf mois avant l'assemblée générale de l'UGGI le secrétaire général doit informer les comités nationaux de la composition du comité de sélection des candidatures et leur demander d'adresser leurs propositions à son président au plus tard six mois avant l'assemblée générale de telle sorte qu'elles soient recevables. Sur la base des propositions des comités nationaux, du bureau de l'AISH et des commissions scientifiques, le comité de sélection préparera une liste de candidats où il s'efforcera de réaliser un équilibre géographique et professionnel satisfaisant.

Chaque candidature à un poste de direction doit être accompagnée d'une notice illustrant la compétence du candidat pour le poste de direction auquel il est présenté. Une déclaration signée prouvant la volonté du candidat d'assumer cette fonction doit également être fournie. Une candidature ne sera recevable qu'accompagnée de la notice et de la déclaration.

Un individu peut être candidat à plus d'un poste de direction, à l'exception d'un candidat au poste de président-élu qui ne peut prétendre à aucun autre poste au sein de l'association.

La liste soumise au vote comprendra les noms des candidats sélectionnés par le comité de sélection des candidatures et mentionnera les noms de tous les autres candidats proposés.

Le vote aura lieu en session administrative plénière de l'association ou par correspondance selon l'article 7.2 des statuts.

- 6.1. Chaque commission scientifique doit établir un groupe de sélection des candidatures d'au moins trois membres au moins dix mois avant une assemblée générale de l'UGGI pour sélectionner les candidatures aux postes de responsabilité des commissions. Neuf mois au moins avant une assemblée générale de l'UGGI le secrétaire général doit informer tous les comités nationaux de la composition de ces groupes et leur demander d'adresser des propositions de candidatures au président du comité de sélection des candidatures six mois au moins avant l'assemblée générale. Le président du comité de sélection des candidatures fournira à chaque groupe de sélection des candidatures la liste des propositions concernant chaque commission scientifique. Sur la base des propositions fournies par les comités nationaux et les diverses commissions scientifiques, chaque groupe de sélection des candidatures devra alors préparer une liste de candidats pour les postes de responsabilités des commissions scientifiques. La constitution de ces listes sera faite en concertation avec le président du comité de sélection des candidatures.

Les propositions pour les postes de responsabilité des commissions se feront selon la même procédure que celle concernant les postes de responsabilité du bureau (article 6) à l'exception du fait que les candidats au poste de président-élu peuvent être candidats à plus d'un poste de responsabilité.

Le vote sur ces listes sera réalisé dans le cadre des sessions administratives plénières des commissions scientifiques ou par correspondance selon l'article 7.2 des statuts. Les résultats seront communiqués au président du comité de sélection des candidatures qui dressera la liste d'attribution des postes de responsabilité des commissions scientifiques qui sera proclamée en session administrative plénière de l'association.

- 6.2. La liste des candidats aux postes de responsabilité de l'association et des commissions devrait en principe comprendre plus d'un candidat par poste à pourvoir. Le président du comité de sélection des candidatures devra diffuser la liste des candidatures au moins trois mois avant l'assemblée générale de l'UGGI.

La liste soumise au vote comprendra les noms des candidats sélectionnés par le comité de sélection des candidatures et mentionnera les noms de tous les autres candidats proposés.

- 6.3. Les votes sur les listes concernant tant l'association que les commissions scientifiques auront lieu au scrutin secret. Pour être élu un candidat doit obtenir la majorité simple. Pour les postes non pourvus au premier tour de scrutin, un second tour de scrutin sera organisé pour départager les deux candidats ayant obtenu le plus de suffrages au premier tour. En cas d'égalité au second tour le président tranchera.

COMITES NATIONAUX

7. Les comités nationaux et représentants nationaux doivent diffuser les informations concernant l'association dans leur pays et solliciter des articles pour les symposiums et pour le "Journal des sciences hydrologiques".
8. Les comités nationaux sont invités à présenter au bureau et aux sessions plénières leur point de vue sur la recherche hydrologique et sur les ressources en eau comme sur les affaires relatives à la gestion de l'association, en tant que contribution aux discussions concernant les futures activités de l'association.
9. Lorsqu'un comité national de l'AISH n'a pas nommé ou désigné une ou plusieurs personnes pour voter en son nom, dans les conditions spécifiées dans les statuts, soit lors d'une session plénière, soit lors d'une réunion d'une commission scientifique ou d'un comité, les délégués présents sont invités à choisir l'un des leurs pour remplir cette fonction.
10. L'association devrait encourager la création de comités nationaux dans tous les pays qui adhèrent à l'union. Lorsque de tels comités n'existent pas, de facto ou de jure, les délégués qui ont assisté aux assemblées générales et aux symposiums de l'AISH sont invités à présenter une demande au comité national de l'UGGI pour former un groupe national en vue de discuter tout problème devant l'AISH ou ses commissions scientifiques et de désigner une délégation à l'assemblée générale.
11. Les comités nationaux doivent désigner un délégué aux sessions plénières de l'association et pour chaque commission scientifique. Les noms de ces délégués doivent être communiqués au secrétaire du groupe intéressé au moins un jour avant toute session administrative.

ORDRE DU JOUR, SYMPOSIUMS ET PUBLICATIONS

12. Le bureau de l'association doit préparer l'ordre du jour des sessions plénières de l'association.
13. Les propositions concernant l'ordre du jour de la session plénière de l'association doivent parvenir au secrétaire général au moins trois mois avant la date de la réunion. Cependant, une question qui n'a pas été spécifiée à l'ordre du jour peut être débattue si une proposition à cet effet a été approuvée par les deux tiers des votes des délégués à la session plénière.
14. Une assemblée scientifique peut-être tenue une fois durant la période de quatre ans séparant deux assemblées générales de l'UGGI.

Directives pour l'organisation des symposiums

15. Un symposium pour lequel l'association a la responsabilité principale (il est désigné sous le nom de symposium AISH dans ce règlement intérieur), devrait être accepté par le bureau et satisfaire les conditions suivantes:
 - (i) Son sujet joue un rôle important dans le développement de l'hydrologie.
 - (ii) Il est proposé par un comité national ou par un responsable de l'association ou de ses commissions scientifiques.
 - (iii) Un pays membre se déclare prêt à le recevoir et présente des possibilités évidentes d'assister l'association pour accueillir la réunion dans de bonnes conditions.

- 15.1. Les symposiums de l'AISH doivent être annoncés (avec un résumé du sujet) par le secrétaire général, dix huit mois au moins avant la date fixée pour le symposium. Un avis doit être envoyé par la poste à chaque comité national et publié dans le bulletin de l'association.
- 15.2. Les symposiums de l'AISH sont organisés conjointement avec un organisme approprié du pays hôte et peuvent bénéficier de l'appui d'autres organisations internationales, ou être organisés en collaboration avec ces organisations internationales. La préférence doit être donnée aux symposiums pour lesquels il existe des possibilités évidentes d'un appui national approprié.
- 15.3. L'association peut apporter son appui ou prendre des responsabilités partielles pour des symposiums d'autres organisations internationales, suivant des dispositions fixées par ,change de correspondance et approuvées par le bureau.
16. L'éditeur est autorisé à prendre toutes dispositions utiles pour la publication d'un bulletin périodique en vue d'assurer la liaison avec les comités nationaux et avec la communauté mondiale des hydrologues.

GENERALITIES

17. Les commissions scientifiques, les groupes d'experts, les groupes de travail et "The International Association of Hydrological Sciences Limited" doivent rendre compte au trésorier tous les ans, en janvier, de l'usage de tous les fonds reçus de l'association ou d'ailleurs pour le financement de leurs activités et dépensés par eux pendant l'année précédente.
18. Membres souscripteurs: Le bureau de l'association est autorisé à accepter les institutions intéressées par l'hydrologie en tant que membres souscripteurs. Moyennant un versement annuel, dont le montant est fixé, par le bureau, de tels membres reçoivent de droit un exemplaire du " Journal ", bénéficient d'une réduction de 20% sur toutes les publications de l'AISH autres que le "Journal", reçoivent des exemplaires de toute note ou circulaire d'information et sont abonnés au bulletin.
19. Le président peut inviter des représentants des agences spécialisées des Nations Unies ou d'autres observateurs, conseillers et consultants, à assister aux réunions des sessions plénières ou du bureau avec possibilité de prendre la parole, mais sans droit de vote.
20. Le siège légal de l'association doit être fixé par le bureau.
21. Le secrétaire général publie les statuts et le règlement intérieur au moins une fois durant la période séparant deux assemblées générales de l'UGGI.
22. Le secrétaire général tient à jour une liste d'hydrologues qualifiés désireux de participer activement aux travaux de l'association. Ces hydrologues seront désignés comme individus membres de l'AISH. Le secrétaire général signalera aux secrétaires de commission scientifique les individus membres s'intéressant à leur commission.

STATUTES & REGULATIONS OF THE INTERNATIONAL ASSOCIATION OF METEOROLOGY & ATMOSPHERIC SCIENCES

(August 1999)

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STATUTES OF IAMAS

I. Objectives of the Association

1. The objectives of the International Association of Meteorology and Atmospheric Sciences are:
 - 1.1. to promote the study of the science of the atmosphere;
 - 1.2. to initiate, facilitate, and coordinate international cooperation;
 - 1.3. to stimulate discussion, presentation and publication of scientific results;
 - 1.4. to promote education and public awareness.

II. Membership of the Association

2. The International Association of Meteorology and Atmospheric Sciences (IAMAS) is one of the constituent Associations of the International Union of Geodesy and Geophysics. All countries which adhere to the Union, including Associate Countries (Members), are Adhering (Member) Countries of the Association and are qualified to appoint delegates to the Association's General Assemblies.
 - 2.1. Adhering Countries may participate in the Association through a number of mechanisms, e.g., directly through their National Committee for the Union, or they may appoint a National Correspondent for the Association or they may appoint a National Committee for the Association.

- 2.2. Associate Countries have restricted rights, which are defined in Article XI, paragraph 33 and Regulation I, paragraph 2.

III. Organs of the Association

3. The International Association of Meteorology and Atmospheric Sciences comprises:
 - a. the Bureau
 - b. the Secretariat
 - c. the Executive Committee
 - d. the General Assembly of Delegates
 - e. the Special Scientific Commissions (hereafter referred to as Commissions)
 - f. the Joint Scientific Committees
- 3.1. The members of the Bureau and of the Executive Committee will be chosen, as far as possible, from those who are from Adhering Countries on the basis of competence, experience, and geographical coverage.

IV. Time Schedule of the Association

4. The Association will meet in Ordinary General Assembly at the time and place of the Ordinary General Assembly of the Union.
 - 4.1. The Association arranges General Assemblies, composed of National Delegates of the Adhering Countries, to conduct the business of the Association. The Association also arranges Scientific Assemblies for the exchange of scientific information.
 - 4.2. The Bureau will have the responsibility for deciding on the schedule of business during the General Assembly. In general, however, an opening Plenary Session should be scheduled during which the President may announce business matters, appoint appropriate committees to function during the General Assembly, and may call for such reports as may be appropriate at this first Plenary. A second Plenary should in general be arranged towards the close of the General Assembly, during which the financial reports will be made, reports of the Commissions heard, resolutions or recommendations adopted, nominations for Officers and members of the Executive Committee presented, elections held, and other appropriate business conducted.
 - 4.3. Extraordinary and Scientific Assemblies may also be called, as outlined in appropriate Articles below.
 - 4.4. For the purposes of discussions in these Statutes, a period is defined as the interval elapsing between the final Plenary Session of one Ordinary General Assembly and the termination of the final Association Plenary Session of the succeeding Ordinary General Assembly (i.e., generally four years).

V. The Bureau

5. The Bureau of the Association will direct and coordinate all scientific and related activities of the Association, and it will function on a continuing basis, as required, in the interval between Ordinary General Assemblies. It will consist of a President, two Vice-Presidents, and a Secretary General (who is also a Treasurer), elected by the General Assembly.
6. The President will be elected at the final Plenary Session of the Ordinary General Assembly; his/her term of office will be for one period following his/her election, and he/she will not be eligible for immediate re-election.
7. The Vice-Presidents will be elected at the final Plenary Session of the Ordinary General Assembly. Their terms of office will be for one period. They will be eligible for immediate re-election but only for one additional period.
8. The Secretary General will be elected at the final Plenary Session of the Ordinary General Assembly. His/Her term of office will be for two periods. A retiring Secretary General will be eligible for immediate re-election, but only for one additional period.
9. If the office of the President becomes vacant between two Ordinary General Assemblies, the senior Vice-President will become President. In the event that the two Vice-Presidents are equal in seniority (i.e., each having been elected for the first time at the same General Assembly), the Executive Committee will decide which Vice-President will become President.
10. If the office of the Secretary General becomes vacant under the same circumstances, a Secretary General will be nominated by the President to occupy the office until the next Ordinary or Extra-ordinary General Assembly. In the event of election at an Extraordinary General Assembly, the initial term of the office will consequently be somewhat shorter than two full periods.

VI. Secretariat

11. The Secretary General will expedite the current business of the Association in agreement with the President. He/She will be responsible for:
 - a. the administrative and scientific correspondence;
 - b. the management of the resources at the disposal of the Association;
 - c. the preparation, printing, and distribution of the publications;
 - d. the arrangements for the Ordinary General Assemblies, Extraordinary General Assemblies, and Scientific Assemblies;
 - e. the execution of the decisions of the Association at General Assemblies.

The management of resources will be understood to include the right to open a banking account in the name of the Association, to authorize the borrowing or the purchase of moveable properties and to dispose of them, in whole or in part, to the benefit of the Association.

12. The Executive Committee may, at its discretion, appoint an Assistant Secretary General, normally resident in the same general area as that of the Secretary General, who will:
 - a. become familiar with the routine operations of the Secretariat;
 - b. have signing authority (together with the President and Secretary General) for cheques on the Association bank account, to be used on instruction from the President or Secretary General;
 - c. assist the Secretary General as appropriate.

VII. Executive Committee

13. The Executive Committee will be composed, in addition to the members of the Bureau, of five elected members from five different countries. They will be elected at the final Plenary Session of the Ordinary General Assembly, and their term of office will be for two periods. They will not be eligible for immediate re-election.
14. The Executive Committee will also include, ex-officio, the Presidents of the Commissions and the retiring President of the Association. The President of a Commission may delegate to the Vice President or the Secretary of that Commission the right to participate in a meeting of the Executive Committee if the President cannot do so.
15. If a vacancy occurs among the elected members of the Executive Committee, a replacement will be chosen by the General Assembly in the course of the next appropriate Plenary Session, for a period which will expire at the time when the member so replaced would have terminated his/her office.
16. The Executive Committee will appoint a Nominating Committee. The governing procedures for the Nominating Committee are presented in Regulation 1.
17. The Executive Committee will be consulted by the Bureau, by correspondence, on every new question of importance, administrative or scientific, which arises between two General Assemblies.
18. Meetings of the Executive Committee may be convened by the Bureau in the interval between two General Assemblies.
19. All decisions of the Executive Committee will be taken following a simple majority vote of those voting. If the votes are equally divided, that of the President will decide.

VIII. General Assemblies

20. The General Assembly of the Association will be composed of Delegates appointed by the National Committees of the Adhering Countries. These appointments will be brought to the notice of the Bureau officially before the opening of the first Plenary Session of the General Assembly. The National Committees will designate the Delegate who, in case of voting by countries, will hold the right to vote for his/her country.
21. As given in Article 4.1, the Association will meet in Ordinary General Assembly at the time of the Ordinary General Assembly of the Union.

22. If the need should arise, the Association may also meet in Extraordinary General Assembly during the interval between two Ordinary General Assemblies of the Union.
- 22.1. The President of the Association, with the concurrence of the Executive Committee, may convene an Extraordinary General Assembly of the Association, which will have the same powers and be subject to the same rules as the Ordinary General Assemblies.
- 22.2. An Extraordinary General Assembly must also be convened by the President upon the request of at least half of the Adhering Countries.
- 22.3. If the date and place of such an Extraordinary General Assembly have not been agreed upon during the preceding Extraordinary or Ordinary General Assembly, that will be determined by the Executive Committee of the Association and communicated to the Adhering Countries at least six months in advance. The date and time will likewise be communicated in good time to the Bureau of the Union and to those of the other Associations of the Union.
23. The Ordinary and Extraordinary General Assemblies will be open to the public. All interested scientists may participate in the discussions, and may take the floor if recognized by the President or Presiding Officer, whether those scientists be formally accredited Delegates or not, or whether they are from Adhering Countries or not. However, voting will be conducted according to the procedures outlined in Article 24 below.
24. At the General Assemblies, the Delegates present will have individually the right to vote on questions of scientific interest.
- 24.1. In the elections mentioned in Articles 6, 7, 8 and 13, the vote will be by country and each country will have one vote.
- 24.2. On administrative matters, without financial implications, voting within the Association will be by country and each country will have one vote, always subject to the condition that the country will have paid its subscription up to the end of the year preceding the voting.
- 24.3. On financial questions, voting within the Association will likewise be by country, provided that the above-mentioned condition is satisfied. The number of votes assigned to each country will be one greater than the number of its category of membership in the Union.
- 24.4. In case of doubt as to which class a question belongs, and in all cases of equality of votes on a question, the decision will rest with the President or Presiding Officer.
- 24.5. In the event that a Chief Delegate from a country cannot be present for voting, he may designate in writing a Delegate from another country to cast the votes on behalf of the country of the aforementioned Chief Delegate.
- 24.6. No Delegate will represent more than two countries.
- 24.7. An Adhering Country not represented by a Delegate may forward by post its vote on any specific agenda question that has been distributed in advance. The postal ballot must be received by the Bureau in advance of the Plenary Session in which the voting takes place.
- 24.8. The decision on all voting matters will be by simple majority of those Delegates or those countries present, including postal ballots, counting for the purpose of determining a majority only those votes cast for or against a particular matter. In case of a tie vote, that of the President or Presiding Officer will decide.
25. The agenda of a Plenary Session of a General Assembly of the Association will be determined by the Bureau, which will have previously invited the National Committees of the Adhering Countries to submit proposals. This agenda will be agreed upon and communicated to the Committees at least four months before the opening of the General Assembly.
- 25.1. Questions not contained in the agenda may be considered during the sessions only with the previous agreement of at least half of the countries represented, or of the Delegates present at the General Assembly, accordingly, as the question is administrative (including financial) or scientific.
26. At Ordinary Sessions of the General Assembly the Secretary General will present a report comprising in particular:
1. a statement of receipts and expenditure of the Association for the period from 1st. January, prior to the preceding Ordinary General Assembly, to 31st. December, prior to the current General Assembly (the financial year being from 1st. January to 31st. December).
 2. an approximate estimate of expenses for the financial years up to that of the next Ordinary General Assembly.
- IX. Scientific Assemblies**
27. The Association may, upon decision taken at an Ordinary or Extraordinary General Assembly, conduct Scientific Assemblies at times other than the General Assemblies. These Scientific Assemblies may be arranged by the Association alone, or they may be held jointly with other Associations of the Union, or with other bodies of the International Council of Scientific Unions. Plans for such Scientific Assemblies will be communicated to the Bureau of the Union and to those of the other Associations in good time.
- X. Financial Arrangements**
28. A Finance Committee, nominated by the President and approved by the General Assembly at its first Plenary Session, will verify the accounts for the preceding years and examine the provisional estimates, both of which having been prepared by the Secretary General. The Committee will approve the financial statements which the Secretary General prepares prior to the submission of these reports, by the Secretary General, to the General Assembly at the Final Plenary Session. The Finance Committee can request that the accounts be audited by a qualified accountant.
29. The Association will draw its resources from that part of the subscriptions of the Adhering Countries which is allotted to it by the Union. To this main income may be added other receipts from the sale of publications, interest on bank accounts, contributions made by other interested

organizations to support symposia or other meetings, registration fees at Assemblies, etc.

30. The income will be assigned in the first place for the payment of the expenses of the Secretariat, namely:
 - a. all costs of publications;
 - b. office equipment, expenses of correspondence, shipping;
 - c. if necessary, the rents of the Secretariat, costs of purchase and maintenance of equipment, and incidental expenses.
- 30.1 Traveling expenses may also be paid by the Secretary General, but only:
 - a. in connection with meetings on specific Association business, and
 - b. when those concerned represent the Association and not Adhering Countries or other organizations, and
 - c. in cases where those concerned cannot draw proper allocations from their own national sources.

Such payments may cover traveling costs and a reasonable contribution to other expenses while attending such meetings.

- 30.2 The balance of receipts will be devoted to grants for scientific activity, e.g., to Commissions and to Joint Committees (In this case subject to the provisions of Statute 44 for conduct of symposia or special scientific meetings, and to participants as far as possible, to Association General or Scientific Assemblies, who cannot obtain adequate travel allocations from other sources. In general, it will be expected that such participants will obtain partial support from the Association's funds, the balance coming from national or other sources.)

XI. Commissions

31. Commissions for the study of particular questions may be constituted by the General Assembly.
 - 31.1 The objectives of the Commissions will be reviewed every four years by the Executive Committee. This will make appropriate recommendations at a Plenary Session of each Ordinary General Assembly, which decides on the continuation of the research and works of the Commission or on its termination.
32. The members of these Commissions will be recognized and interested scientists.
 - 32.1 The Commissions may elect new members by a simple majority vote of the members voting in the election. These members must be from Adhering Countries. Members may also be appointed from non-Adhering Countries by the President of a Commission, after consultation with members of the Commission. Due regard should be paid to geographical representation in the composition of the Commissions. The terms of Commission members will normally be for two full periods. The results of membership elections and appointments will be reported to the General Assembly.
33. Each Commission will elect a President and a Secretary from among their membership; and a Vice President may also be elected if the Commission desires; their terms of office will normally be for one four year term. They will be eligible for re-election for one additional term. Officers

will be from Adhering Countries, except Associate Countries.

34. When a new Commission is constituted, the first President will be appointed by the Executive Committee. The Commission President will invite appropriate scientists to be members. These appointments will be voted upon by the Commission at its first meeting.
- ~~35.~~ The Commission should, in general, conduct their elections of officers and members at the times of the Ordinary General Assemblies of the Association. In this case these elections should be held prior to the final Plenary Session of the General Assembly so that the results, along with other business conducted by the Commissions, may be reported to the General Assembly. Alternatively, Commissions may decide to elect their officers at a Commission meeting/ symposium that is independent of the Ordinary General Assembly, or by correspondence. The General Assembly will have the right to comment on the work of the Commission, which the Commissions may wish to consider at subsequent business sessions.
36. The Commissions may meet and have symposia when convened by their President outside the meetings of the General Assemblies. Such symposia may be arranged jointly between interested Commissions, or jointly with other appropriate bodies of the International Council of Scientific Unions, or with other relevant organizations (e.g., the World Meteorological Organization).
37. A Commission may, at the discretion of its President, appoint Sub-Commissions, Committees, or Working Groups, to undertake special studies or to devote specialist attention to a part of the general area of concern. The members of such sub-bodies need not be members of the Commission. They should be appointed by the President of the Commission, after due consultation with members of the Commission. Findings or recommendations of such sub-bodies must be approved by the parent Commission before promulgation.
38. All decisions of Commissions will be taken by a simple majority of votes of the members voting (individual votes). In case of equal votes for and against, that of the President will decide.

XII. Joint Committees

39. Joint Committees between the Association and other Associations on scientific questions of mutual interest may be constituted by the Associations concerned. In the case of IAMAS, formal approval will be given by a General Assembly, although approval in principle may be granted at an earlier date by the Executive Committee.
40. The members of the Joint Committee will be appropriate scientists nominated by the respective Associations, each of which will normally nominate the same number of members.
41. The Joint Committees may propose new members whose nomination must be ratified by the respective Association at the occasion of their General Assembly. The term of office of members will be for one period. They will be eligible for re-appointment.
42. Each Joint Committee will elect a President and Secretary who will not both have been appointed by the same

Association, and whose term of office will be for one period. They will be eligible for re-election once.

43. The Joint Committees will formulate their program of work and will organize their meetings, insofar as possible, during the course of the sessions of the General Assembly of the Union. The proceedings of the Joint Committees will be appended to the minutes of the Associations concerned.

43.1. The Joint Committees may meet when convened by their President outside the meetings of the General Assemblies, on condition that the Bureaus of the respective Associations are advised beforehand. They may meet at the same time as related Commissions or Joint Committees constituted by other Associations of the Union or by other Unions, in order to study and resolve together problems which interest more than one Association of the Union or more than one Union.

44. Requests from a Joint Committee for subsidies must be presented and supported by the Associations concerned.

45. Every Joint Committee may refer in a consultative capacity to experts who are not members of the Joint Committee.

46. All decisions of Joint Committees will be taken by a simple majority of votes of the members present (individual votes). In case of equal votes for and against, that of the President will decide.

47. The IAMAS Executive Committee will review the continued participation of IAMAS in each Joint Committee every four years.

XIII. Dissolution of the Association

48. If the Association should be dissolved, its financial assets will revert to the Union to be used for the continuation of scientific and educational activities, such as the organization of scientific meetings and symposia, the dissemination of scientific information, and the coordination of international research activities.

XIV. Changes in the Statutes of the Association

49. Only Adhering Countries or members of the Executive Committee may propose changes to any article in these Statutes and Regulations. These changes must reach the Secretary General at least six months before the announced date of the General Assembly at which it is to be considered. The Secretary General will notify all Adhering Countries and Executive Committee members of any proposed change at least four months before the General Assembly meeting.

50. The Statutes and Regulations can be modified by a simple majority vote of the Adhering Countries present at a General Assembly Plenary Session. Such changes will come into effect at the close of the General Assembly at which they are approved.

XV. Official Languages of the Association

51. The Association will observe the official languages recognized by the Union, namely French and English. Abstracts or reports may be submitted in either of these languages for publication

52. For the interpretation of the Statutes, the English text and the French text will both be considered authoritative.

REGULATIONS

I. Governing Procedures of the Nominating Committee

1. The Executive Committee will appoint a Nominating Committee at the Scientific Assembly two years before a General Assembly. This committee will be responsible for nominating candidates for President, two Vice Presidents, elected members of the Executive Committee, and a Secretary General, when required. The Nominating Committee will consist of a chairperson and two other members plus the President as an ex-officio member.

2. The Nominating Committee will contact the Adhering Countries of the Association and the Executive Committee at least six months before the General Assembly and request nominations for the positions indicated above to reach them at least four months before the General Assembly. The Nominating Committee will consider nominees from Adhering Countries, from Commissions and from other sources; it may select a single slate of candidates. The nominees will be from Adhering Countries, except Associate Countries. This slate will be communicated to Adhering Countries and the Executive Committee at least two months before the General Assembly.

3. Any nominations for President or Secretary General should be accompanied by an indication of available resources for the operation of the respective offices.

4. At the first Plenary Session of the General Assembly the Nominating Committee will formally table its slate of candidates. Nominations from the floor for all positions except Secretary General can be made at that time. All nominations require the agreement of the individual to serve if elected. The election will take place during the final Plenary Session of the General Assembly.

STATUTES & BY-LAWS OF THE INTERNATIONAL ASSOCIATION FOR THE PHYSICAL SCIENCES OF THE OCEANS

(Adopted by the General Assembly at Berne, October 1967, modified at Canberra, December 1979,
modified at Honolulu, August 1995, modified by mail ballot, 1998)

STATUTES OF IAPSO

I. Objects, Composition & Membership of the Association

1. The International Association for the Physical Sciences of the Oceans (IAPSO) is a constituent of the International Union of Geodesy and Geophysics. The Association is subject to those articles of the Statutes and By-Laws of the Union which apply to Associations, and also to these Statutes.
2. The objects of the Association are:
 - a. To promote the study of scientific problems relating to the ocean and interactions taking place at its boundaries, chiefly insofar as such study may be carried out by the aid of mathematics, physics and chemistry.
 - b. To initiate, facilitate and coordinate research into and investigations of those problems of the ocean which require international cooperation.
 - c. To provide for discussion, comparison and publications.
3. Those countries which adhere to the Union are Members of the Association.

By resolution of a General Assembly of the Association, other international organizations which are concerned with the study of physical sciences of the oceans may be admitted to Membership, with the status of guests.

II. Administration

4. The Authority of the Association shall be vested in the countries adhering to the Union, and exercised collectively by their delegates meeting in General Assembly of the Association.
5. The Association shall hold business meetings at the General Assemblies of the Union, to be held normally once every four years.

The Association may recommend to the Executive Committee of the Union, at a General Assembly of the Union, arrangement of joint sessions of two or more Associations or of joint meetings of two or more Committees or Commissions for the discussion of topics of an interdisciplinary character.

With the concurrence of the Executive Committee of the Union, the Association may arrange General Assemblies and other meetings of its own in the interval between the General Assemblies of the Union, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.

6. The General Assembly of the Association shall elect the President, the two Vice-Presidents, the Secretary General and the Deputy-Secretary General of the Association.
7. The Bureau of the Association shall consist of the President and the Secretary General. Its duties shall be to conduct the affairs of the Association in accordance with the decisions

of the foregoing General Assemblies of the Association. It shall prepare the Agenda for General Assemblies.

8. The General Assembly of the Association shall elect, from countries which adhere to the Union, six persons who, together with the President, immediate Past President, Vice Presidents, Secretary General, and Deputy Secretary General, shall constitute the Executive Committee of the Association.
9. A Nominations Committee of four persons from countries which adhere to the Union will be appointed by the Executive Committee. The Nominations Committee will normally include the immediate Past President as its Chairperson. Its function will be to scrutinize nominations received for positions on the Executive Committee which become vacant, to seek additional nominations where appropriate, to ensure disciplinary and geographical distribution, and to prepare a final slate of candidates for election by the General Assembly.

III. Voting

10. On scientific matters, each delegate present shall have one vote.
11. In questions of administration or of mixed, administrative and scientific character not involving questions of finance, voting shall be by countries, each country having one vote with the provision that its subscription shall have been paid up to the end of the year preceding the voting.
12. In questions involving finance, voting shall be by countries, with the same provision as for administrative questions. The number of votes for each country shall be one greater than the number of its category of membership to the Union.
13. In case of doubt as to which class a question belongs, and in all cases of equality of votes, the chairman shall decide.
14. A delegate shall represent only one Member Country. An adhering country not represented by a delegate may forward by post its vote on any specific question of an agenda.
15. Guests will not vote.

IV. General

16. These Statutes shall be changed only by a majority of two thirds of the votes cast as a General Assembly by delegates or by post.
17. The Association may make By-Laws which may be changed by a simple majority of the votes cast at a General Assembly by the delegates or by post.
18. This English text shall be the authoritative text of the Statutes of the Association.

BY-LAWS OF IAPSO

I. Membership of the Association

1. It is recommended that each adhering country shall form a National Sub-Committee for the Physical Sciences of the Ocean, to which correspondence may be addressed.
2. Each adhering country and each international member may contribute to the Agenda of General Assemblies of the Association.

II. Administration

3.
 - a. The President and the Vice-Presidents shall be elected for one four-year term. Their terms shall be the interval between the ends of two successive General Assemblies of the Association.
 - b. The term of the immediate Past President shall run from the end of the General Assembly at which the new President is elected until the end of the next General Assembly.
 - c. The Secretary General and Deputy-Secretary General shall be elected for two periods, and may be re-elected for subsequent single periods.
4. The Secretary General shall manage the routine business, conduct the correspondence, preserve the records, and arrange the preliminaries of General Assemblies. The retiring Secretary General is to publish the proceedings of the General Assembly at which his successor was elected.
5. Of the six persons referred to in Article 8 of the Statutes, not more than three may be elected to an additional term.
6. The Executive Committee shall:
 - a. Prepare for the Executive Committee of the Union recommendations concerning the arrangement, at a General Assembly of the Union, of scientific meetings to be confined to joint sessions of two or more Associations or of Joint meetings of two or more Committees or Commissions, for the discussion of topics of an interdisciplinary character.
 - b. Seek for the concurrence of the Executive Committee of the Union for the arrangement of General Assemblies and other meetings of the Association in the intervals between the General Assemblies of the Union, either singly to deal with topics of specific interest, or jointly with another Association or other Associations.
 - c. Fill any vacancy which may occur among the officers of the Association between General Assemblies. Such appointments shall be subject to the subsequent approval of the next General Assembly. Tenure of office for part of a period shall not be counted as a period for the purpose of these By-Laws.
 - d. Consider matters of general administration and finance, and report thereon to the General Assembly.
 - e. Make recommendations on matters of policy.
 - f. Frame the budget for the ensuing period and report to the General Assembly of the Association and to the Secretary General of the Union. The budget period of the Association coincides with the budget period of the Union.
 - g. Advise upon the distribution of funds.
 - h. Consider proposals for changes in the Statutes and By-Laws, and report thereon to the General Assembly.
7. Officers designated by these By-Laws for special duties or for special committees may appoint substitutes in their stead. Notice of the intention to do so must be sent in

writing to the President or Secretary General. No substitute shall represent more than one officer.

8. Decisions and actions of the Officers and Committees of the Association, taken during and between General Assemblies, shall be subject to the sanction of the General Assembly.
9. Proposals for the Agenda of a General Assembly shall reach the Secretary General six months before the General Assembly. The Secretary General shall send the Agenda to adhering countries, through the National Sub-Committees where such exist, at least four months before the General Assembly. No question which has not been placed on the Agenda shall be discussed unless a proposal to that effect be approved by two-thirds of the votes of the countries represented at the Assembly.
10. Nominations Committee.
 - a. The terms of members of the Nominations Committee referred to in Article 9 of the Statutes will expire at the end of the General Assembly following their appointment.
 - b. A call for nominations for candidates for positions on the Executive Committee will be issued by the Secretary General of the Association at least six months prior to a General Assembly where an election is to take place.
 - c. Nominations must be accompanied by a brief Curriculum Vitae, and will not be accepted later than three months prior to the General Assembly, except for additional candidates identified by the Nominations Committee in Accordance with Article 9 of Statute I.
 - d. The Nominations Committee will prepare a slate of candidates one month prior to the General Assembly, and will confirm that the members of this slate are prepared to serve if elected.
 - e. In the event of a vacancy occurring on the Executive Committee during its term of office as a result of the resignation or demise of a member, the Nominations Committee will assist the Executive Committee in finding a suitable replacement.

III. Finance

11. The President and Secretary General shall individually have power to sign documents on behalf of the Association.
12. The Secretary General shall receive the allocations of funds from the Union, and administer the funds of the Association. At the end of the calendar year preceding a General Assembly of the Union he shall prepare and send to the Secretary General of the Union the Accounts of the Association.
13. Each Account shall be audited by a qualified accountant.
14. Travelling expenses may be paid by the Secretary General, but only (a) in connection with meetings on specific Association business, and (b) when those concerned represent the Association and not adhering countries or other organizations, and (c) in cases where those concerned cannot draw proper allocations from their own national sources. Such payments may cover travelling costs and a reasonable contribution to other expenses while attending such meetings.

STATUTS & RÈGLEMENTS DE L'ASSOCIATION INTERNATIONALE DES SCIENCES PHYSIQUES DE L'OcéAN

(Adopted by the General Assembly at Berne, October 1967, modified at Canberra, December 1979,
modified at Honolulu, August 1995, modified by mail ballot, 1998)

STATUTS DE L' AISPO

I. Buts, Composition et Membres de l'Association

1. L'Association Internationale des Sciences Physiques de l'Océan (AISPO) est une des Associations constitutives de l'Union Géodésique et Géophysique Internationale. L'Association est assujettie aux Articles des Statuts et du Règlement Intérieur de l'Union qui s'appliquent aux Associations et, également, aux présents Statuts.
2. L'Association a pour buts :
 - a. d'encourager l'étude des problèmes scientifiques concernant l'océan et les interactions prenant place à ses limites, dans la mesure, principalement, où une telle étude peut être effectuée à l'aide des mathématiques, de la physique et de la chimie.
 - b. de promouvoir, faciliter et coordonner la recherche et les investigations sur les problèmes océaniques qui exigent une coopération internationale.
 - c. de provoquer des discussions et des comparaisons et d'assurer la publication des résultats de ses travaux.
3. Les pays qui adhèrent à l'Union sont les Membres de l'Association.

En vertu des résolutions prises en Assemblée Générale de l'Association, d'autres organisations internationales qui ont à connaître des résultats de l'étude des Sciences Physiques de l'Océan peuvent être admises comme Membres, avec le statut d'invités.

II. Administration

4. L'autorité de l'Association est dévolue aux pays adhérant à l'Union : elle s'exerce collectivement par les Délégués réunis en Assemblée Générale de l'Association.
5. L'Association tient des sessions administratives aux Assemblées Générales de l'Union ; celles-ci ont lieu normalement tous les quatre ans.

L'Association peut recommander au Comité Exécutif de l'Union, au cours d'une Assemblée Générale de l'Union, l'organisation de sessions conjointes de deux Associations, ou plus, ou de réunions conjointes de deux ou plusieurs Comités ou Commissions en vue de la discussion de questions de caractère interdisciplinaire.

Avec l'approbation du Comité Exécutif de l'Union, l'Association peut organiser des Assemblées Générales et d'autres réunions pour son propre compte dans l'intervalle entre les Assemblées Générales de l'Union, soit à elle seule pour traiter de questions qui l'intéressent spécifiquement, soit conjointement avec une autre ou d'autres Associations.

6. L'Assemblée Générale de l'Association élit son Président, ses deux Vice-Présidents, le Secrétaire Général et le Secrétaire Général Adjoint de l'Association.
7. Le Bureau de l'Association est formé du Président et du Secrétaire Général. Il dirige les affaires de l'Association en accord avec les décisions des Assemblées Générales

antérieures de l'Association. Il prépare l'Ordre du Jour des Assemblées Générales.

8. L'Assemblée Générale de l'Association élit, parmi les ressortissants des pays adhérant à l'Union, six personnes qui, avec le Président, le Président sortant, les Vice-Présidents, le Secrétaire Général et le Secrétaire Général Adjoint, forment le Comité Exécutif de l'Association.
9. Un Comité des Nominations composé de quatre personnes issues de pays adhérant à l'Union est nommé par le Comité Exécutif. Le Comité des Nominations est normalement présidé par le Président sortant. Il lui appartient d'examiner les candidatures reçues pour les postes à pourvoir au Comité Exécutif, de rechercher de nouvelles candidatures si nécessaire, pour assurer une bonne répartition thématique et géographique, et de préparer une liste définitive des candidats en vue de leur élection par l'Assemblée Générale.

III. Votes

10. En matière scientifique, chaque Délégué a une voix.
11. En matière d'administration ou en matières ayant un caractère mixte, administratif et scientifique mais n'ayant pas d'incidence financière, le vote a lieu par pays : chaque pays dispose d'une voix, sous réserve qu'il soit à jour de sa cotisation à la fin de l'année précédant le vote.
12. Pour les questions ayant une incidence financière, le vote a lieu par pays, avec la même réserve que pour les questions administratives. Le nombre de voix dont dispose chaque pays dépasse d'une unité le numéro de sa catégorie comme Membre de l'Union.
13. En cas de doute sur le caractère d'une question et dans tous les cas de partage égal des voix, la voix du Président est prépondérante.
14. Un Délégué ne peut représenter qu'un seul Pays Membre. Un Pays Membre qui n'est pas représenté par un Délégué peut voter par correspondance sur toute question définie d'un Ordre du Jour.
15. Les invités ne prennent pas part au vote.

IV. Généralités

16. Ces Statuts ne peuvent être modifiés que par une majorité des deux-tiers des votes exprimés à une Assemblée Générale par les Délégués présents ou exprimés par correspondance.
17. L'Association peut établir un Règlement Intérieur qui peut être modifié à la majorité simple des votes exprimés à une Assemblée Générale par les Délégués présents ou exprimés par correspondance.
18. Le texte anglais des Statuts de l'Association fait foi.

RÈGLEMENT INTÉRIEUR DE L' AISPO**I. Composition de l'Association**

1. Il est recommandé que chaque pays adhérent forme un Comité National des Sciences Physiques de l'Océan, auquel la correspondance peut être adressée.
2. Tout pays adhérent et tout membre international peuvent faire des propositions pour l'Ordre du Jour des Assemblées Générales de l'Association.

II. Administration

3.
 - a. Le Président et les Vice-Présidents sont élus pour une période de quatre ans. Leurs mandats courent pendant la période comprise entre les fins de deux Assemblées Générales consécutives de l'Association.
 - b. Le mandat du Président sortant commence dès la fin de l'Assemblée Générale au cours de laquelle le nouveau Président est élu et se termine à la fin de l'Assemblée Générale suivante.
 - c. Le Secrétaire Général et le Secrétaire Général Adjoint sont élus pour deux périodes et peuvent être par la suite réélus une ou plusieurs fois mais chaque fois, pour une seule période.
4. Le Secrétaire Général traite les affaires courantes, assure la correspondance, conserve les archives et prend les dispositions préparatoires aux Assemblées Générales. Le Secrétaire Général sortant publie les Comptes Rendus de l'Assemblée Générale à laquelle son successeur a été élu.
5. Des six personnes mentionnées à l'Article 8 des Statuts, pas plus de trois peuvent être réélues pour un mandat supplémentaire.
6. Le Comité Exécutif:
 - a. Prépare, pour le Comité Exécutif de l'Union, des recommandations concernant l'organisation, à une Assemblée Générale de l'Union, des réunions scientifiques réservées aux sessions conjointes avec deux Associations, ou plus, ou des sessions conjointes de deux (ou plus) Comités ou Commissions en vue de la discussion de questions de caractère interdisciplinaire ;
 - b. Sollicite l'approbation du Comité Exécutif de l'Union pour l'organisation des Assemblées Générales ou d'autres réunions de l'Association dans l'intervalle entre les Assemblées Générales de l'Union, soit pour elle seule pour traiter de questions spécifiquement de son ressort, soit conjointement avec une ou d'autres Associations;
 - c. Comble toute vacance qui pourrait se produire parmi les Officiels de l'Association entre les Assemblées Générales. De telles nominations sont soumises à l'agrément de l'Assemblée Générale suivante. L'occupation d'un poste pendant une partie seulement de la période ne sera pas comptée comme une période, au titre du présent Règlement Intérieur;
 - d. Etudie les questions d'administration générale et de finances et en fait rapport à l'Assemblée Générale;
 - e. Fait des recommandations sur des problèmes de politique générale du ressort de l'Association;
 - f. Prépare le budget pour la période suivante et en fait rapport à l'Assemblée Générale de l'Association et au Secrétaire Général de l'Union. La période budgétaire de l'Association coïncide avec la période budgétaire de l'Union.
 - g. Donne son avis sur la distribution des fonds.
 - h. Examine des propositions de modification des Statuts ou du Règlement Intérieur et en fait rapport à l'Assemblée Générale.

7. Les officiers qui ont été affectés à des tâches spéciales d'après le Règlement Intérieur ou qui ont été nommés à des comités spéciaux, peuvent désigner des suppléants. Notification de leur intention de le faire doit être envoyée par écrit au Président ou au Secrétaire Général. Aucun suppléant ne peut représenter plus d'un officier.
8. Les décisions et les actions des Officiels et des Comités de l'Association, prises ou entreprises pendant ou entre les Assemblées Générales, sont soumises à l'approbation de l'Assemblée Générale.
9. Les propositions concernant l'Ordre du Jour d'une Assemblée Générale doivent être notifiées au Secrétaire Général six mois avant l'Assemblée Générale. Le Secrétaire Général adressera l'Ordre du Jour aux Pays Membres, par l'intermédiaire de leurs Comités Nationaux, quand ils existent, au moins quatre mois avant l'Assemblée Générale. Aucune question non portée à l'Ordre du Jour ne sera discutée, à moins qu'une proposition dans ce sens ne soit approuvée par les deux-tiers des votes des pays représentés à l'Assemblée.
10. Comité des Nominations
 - a. Les mandats des membres du Comité des Nominations mentionnés à l'article 9 des Statuts expirent à la fin de l'Assemblée Générale suivant leur nomination.
 - b. Le Secrétaire Général de l'Association lance, au moins six mois avant l'Assemblée Générale à laquelle une élection doit avoir lieu, un appel à candidatures aux postes du Comité Exécutif.
 - c. Les candidatures doivent être accompagnées d'un court curriculum vitae, et doivent être reçues au plus tard trois mois avant l'Assemblée Générale pour être acceptées, sauf pour les candidats supplémentaires proposés par le Comité des Nominations selon l'Article 9 des Statuts.
 - d. Le Comité des Nominations prépare une liste provisoire des candidats un mois avant l'Assemblée Générale, et confirme que les membres de cette liste provisoire accepteront leur mandat s'ils sont élus.
 - e. Si un poste devient vacant au Comité Exécutif pendant la durée d'un mandat suite à la démission ou au décès d'un membre, le Comité des Nominations aidera le Comité Exécutif à trouver un remplaçant approprié.

III. Finances

11. Le Président et le Secrétaire Général sont individuellement habilités à signer des documents au nom de l'Association.
12. Le Secrétaire Général reçoit des fonds de l'Union et administre les fonds de l'Association. A la fin de l'année précédant une Assemblée Générale de l'Union, il prépare et envoie au Secrétaire de l'Union la comptabilité de l'Association.
13. La comptabilité doit être certifiée exacte par un comptable qualifié.
14. Des frais de voyage peuvent être payés par le Secrétaire Général mais seulement (a) pour des réunions relevant spécifiquement de l'Association, et (b) quand les personnes concernées représentent l'Association et non pas les Pays Membres ou d'autres Organisations, et (c) dans les cas où les personnes concernées ne peuvent obtenir les crédits nécessaires sur des fonds nationaux. De tels paiements peuvent couvrir les frais de voyage et une contribution raisonnable aux autres dépenses résultant de l'assistance aux réunions prévues.

STATUTES & BY-LAWS OF THE INTERNATIONAL ASSOCIATION OF SEISMOLOGY & PHYSICS OF THE EARTH'S INTERIOR

(Adopted by the General Assembly of the Association, Grenoble, 1975,
and amended by the General Assembly, London, Canada, 1981)

STATUTES OF IASPEI

I. Objects of the Association

1. The purpose of the International Association of Seismology and Physics of the Earth's Interior is:
 - a) To promote the study of problems relating to earthquakes, to the propagation of seismic waves, and to the internal structure, properties and processes of the Earth;
 - b) To initiate and co-ordinate the conduct of researches which depend on co-operation between different countries, and to provide for their scientific discussion;
 - c) To facilitate particular researches on scientific and applied seismology, such as the comparison of instruments used in different countries, researches on blasting and generally all matters to which seismology is related.

II. Members of the Association

2. Each country having adhered to the Union is a member of and has the right to send representatives to the Association. The word "country" has the same sense as in the statutes of the Union.

III. National Committees

3. Each National Committee for the IUGG should include a section, or sub-committee, of Seismology and Physics of the Earth's Interior. The functions of this Committee and of its section or sub-committee are to facilitate and co-ordinate in their respective countries the study of the different questions relating to Seismology and Physics of the Earth's Interior in accordance with the objects of the Association. The Committee and the Section or Sub-Committee shall be empowered to propose to the Association for discussion questions falling within the competence of the Association.

The National Committee on the recommendation of the Section nominates the delegate or the delegates who shall represent it at the General Meeting of the Association. One of these delegates shall be designated as the principal delegate of the country and shall cast the vote of that country in all questions except the purely scientific ones (see article 18).

Official communications sent by the International Association of Seismology and Physics of the Earth's Interior to an adhering country shall be addressed to the Seismological Section or in default to the National Committee of Geodesy and Geophysics.

IV. Administration of the Association

4. The work of the Association shall be directed by the General Meeting of the delegates of the Member countries of the Association.
5. The General Meeting of the Association shall elect the following: a President, a First and Second Vice-President, a Secretary General, a Treasurer and four additional persons. It is desirable that each of these four be Chairman of a Commission. These, plus the immediate past President shall constitute the voting members of the Executive Committee of the Association.

A single person may, with the approval of the Executive Committee, be elected both Secretary General and Treasurer.

The President, the Vice-Presidents, the Secretary General and the Treasurer shall constitute the Bureau of the Association.

6. Elections shall be held at each Ordinary General Meeting held in conjunction with a General Assembly of the International Union of Geodesy and Geophysics. The President may not be reelected to the same office, and no person may hold any one office for more than twelve consecutive years.
7. The transfer of duties takes place at the close of the General Meeting at which the election occurs. The interval between successive elections is called a period.
8. The National Committee, or in default the adhering organization, names in each country a correspondent, whose duty is to provide liaison between the Association and the Section in each country.
9. The Executive Committee may appoint members to such committees and working groups as may be needed and may approve their terms of reference.

Urgent matters arising in the interval between General Assemblies shall be referred by the Bureau to the Executive Committee.

The Executive Committee may appoint an Associate Secretary who will be ex-officio a member of the Executive Committee, but without vote.

Should a vacancy occur among the elected officerships, the Bureau shall fill the position provisionally and an election shall be held for this office at the next General Meeting of the Association.

V. Secretariat

10. A Secretariat placed under the direction of the Secretary General shall conduct the correspondence, preserve the administrative archives, arrange the General and other meetings, and prepare and distribute the Comptes-Rendus of the Assemblies.

VI. Finance

11. The resources of the Association are derived from:
 - a) The allocation by the Union;
 - b) The sales of publications, subscriptions, advertisements, etc.;
 - c) Grants.
12. The Treasurer shall administer and disburse these resources under the direction of the Executive Committee. The administration of resources shall include the permanent delegation of authority to manage any bank accounts which have been opened in the name of the Association in different countries.

As a precaution, the right to sign as an authorized agent for any account opened in the name of the Association, shall be extended to at least one other Member of the Bureau of the Association.

But the Treasurer shall alone retain responsibility toward the Association for all banking operations.

VII. General Meetings of the Association

13. Ordinary General Meetings shall be held in conjunction with General Assemblies of the International Union of Geodesy and Geophysics and normally at least once between each such meeting. Business sessions shall be held at all General Meetings, but elections shall normally be held only at General Meetings held in conjunction with General Assemblies of the Union.

The Bureau of the Association may, with the approval of the Executive Committee, summon an extraordinary General Meeting. It must do so at the request of one-third of the votes of the members of the Executive Committee.

14. Members of a National Committee who are not delegates may attend the meetings of the Association and take part in the discussion, but shall have no power of voting.

The Bureau of the Association may invite representatives of scientific organizations and also scientists not officially delegated by the National Committees of their respective countries, but only after having obtained the approval of these Committees. Such invited guests may take part in the discussion, but shall have no power of voting.

15. The agenda of business to be transacted at a meeting are prepared by the Bureau and sent to the adhering organizations together with the notices of the meeting.

No question which has not been placed on the agenda shall be discussed without the consent of at least one-half of the votes of the countries represented at the General Meeting.

16. In the intervals between the General Meetings and by agreement with the Bureau of the Union, the Association may, either separately or jointly with other Associations, hold additional meetings. But in any case the Association shall hold a General Meeting at the same time as the Union itself.

VIII. Budget

17. The Executive Committee shall prepare for each period and submit to the General Meeting an estimate of the budget relative to the expenses of the Secretariat.

A committee, nominated by the General Assembly shall examine the accounts for the preceding years and the estimate for the next period. It shall give discharge to the Treasurer for the accounts prepared by the Treasurer for the preceding period and submitted to the General Meeting.

IX. Voting Power

18. In a General Meeting, resolutions concerning purely scientific questions shall be decided by a majority of the votes cast by all the delegates present.

In all other questions which appear on the agenda, the voting shall be by Member countries, each member country having one vote; a country not represented may forward its vote to the Secretary General in writing. Such votes shall be counted only if received before the result of the ballot is ascertained.

In case of doubt as to the category to which a question belongs, the President shall decide.

When there is an equal division of votes, the President shall have a deciding vote.

The election of the Bureau and of the Executive Committee is counted as an administrative question.

X. Validity of Statutes

19. These statutes may be revised by any of the following means:

- a) At any business meeting, by the approval of two-thirds of the member countries.
- b) By the approval of a majority of the member countries using a mail ballot authorized by the Executive Committee, provided that the revision is favoured by two-thirds of those countries which vote.
- c) By a two-thirds majority vote of the member countries represented in person at a business meeting of an ordinary General Meeting, plus those who have forwarded their vote to the Secretary General in writing, provided that the proposed modification was read at a plenary session of the preceding General Meeting or was included in the agenda mailed in advance to all member countries.

20. In voting on revisions of the statutes, a delegate may represent only one country.

21. The English text shall be used exclusively in interpreting these statutes.

XI. Commissions

22. a) The Association may establish commissions to study scientific topics and to stimulate and coordinate research on these topics or research related to a specific region.
- b) The Association may also establish joint commissions with other organizations.

23. Officers of commissions shall not hold the same office for more than two periods.

BY-LAWS OF IASPEI

The following by-laws are established in order to provide for continuing guidance in conducting the affairs of the Association. Their revision comes under the purview of Article 19 of the Statutes.

1. Resolutions Committee. At the first business meeting, the President shall appoint a Resolutions Committee consisting of one officer of the Association and two other persons. All resolutions to be presented at the last general business meeting must be transmitted in writing to the Resolutions Committee at least four days before the said meeting. It is the responsibility of the Resolutions Committee to word the resolutions consistently with the terminology of the Association and of the Union. The Committee shall post all Resolutions, and its recommendations on each of them at least one day before the final business meeting.
2. Nominating Committee. Not later than the opening day of each ordinary General Meeting of the Association at which an election is to be held, the President of the Association,

with the approval of the Executive Committee, should appoint a Nominating Committee to bring before the Business Meeting of the Association a slate of officers for the ensuing four years including the four elected members of the Executive Committee besides the officers. The names of this Committee should be announced at the first Business Session of the Association. This Committee should be charged with finding the persons best able and willing to direct the work of the Association, keeping in mind the need for persons of executive ability, comprehensive scientific interests and broad national representation. The Nominating Committee should consult with all former Presidents of the Association present at the meeting. At the business meeting, additional nominations for each office may be made from the floor.

Where there is only one nominee for an office, the election may be conducted by acclamation. If there are additional nominations, the elections should be by written ballot, one ballot passed out to the delegate of each member country or to an official alternate.

3. Meetings of the Bureau and of the Executive Committee. The Bureau of the Association should meet at least every year. The Executive Committee should meet as often as necessary and at least once every Ordinary General Assembly.

Payment of the travel expenses of members to these meetings is a high-priority Association expense.

4. Conduct of Meetings. Except if otherwise provided in the Statutes, business meetings shall be conducted according to Robert's Rules of Order. A copy thereof shall be provided to each officer of the Association.

STATUTES & BY-LAWS OF THE INTERNATIONAL ASSOCIATION OF VOLCANOLOGY & CHEMISTRY OF THE EARTH'S INTERIOR

(Adopted in July 1995 at the IUGG General Assembly, Boulder, Colorado, USA)

STATUTES OF IAVCEI

I. Objectives

1. The objectives of the International Association of Volcanology and Chemistry of the Earth's Interior (hereafter referred to as the Association) are:
 - (1) to promote the study of volcanoes and volcanic processes, past and present, and of the chemistry of the Earth's interior;
 - (2) to encourage, initiate, and coordinate research and to promote international cooperation in these studies;
 - (3) to arrange for the discussion and publication of the results of scientific research on volcanology and on the chemistry of the Earth's interior;
 - (4) to encourage volcanologists to alert appropriate authorities to the importance of adequate surveillance of active and potentially active volcanoes and of volcanic risk assessment

II. Membership

2. The Association is a constituent association of the International union of geodesy and Geophysics (hereafter referred to as the Union), and is subject to the Statutes and By-Laws of the Union as well as to these Statutes.
3. Any Member Country of the union shall be regarded as a Member of the Association and may, through its Adhering Body, appoint a National Correspondent to represent it in the Association
4. Individuals professionally engaged in, or associated with, volcanology and studies of the chemistry of the Earth's interior, can apply to become Affiliates of the Association, Affiliates pay an annual subscription fee.

III. Administration

5. The authority of the Association shall be vested in the general Assembly which is formed by
 - (1) Affiliates from member countries who have paid the annual subscription fee, and
 - (2) National Correspondents of member countries of the Union. All the members of the General Assembly are eligible to hold office. All Affiliates and National Correspondents will receive publications and other materials which by decision of the Executive Committee are considered appropriate. Only national Correspondents from member countries have the right to vote on financial and Union matters.
6. General Assemblies of the Association normally shall be held in conjunction with General Assemblies of the Union. They can be held also between successive General Assemblies of the Union at the discretion of the Association's Executive Committee.

7. The business of the Association between General Assemblies shall be carried on by the Bureau (President, two Vice-Presidents, Secretary-General, and Deputy Secretary) of the Association.

8. The Executive Committee of the Association shall consist of the five members of the Bureau and four other members. All nine members shall be elected by postal vote of the current Affiliates and National Correspondents. The Past President and the Executive Editor of the Bulletin of Volcanology shall be ex officio, members of the Executive Committee. No more than two officers from the same country can be elected. No member of the Executive Committee may be elected for more than two successive periods.

9. The Executive Committee shall have the power to fill any vacancy that arises on the Executive committee during the interval between successive periods of postal voting. The Executive Committee shall have the power to appoint the Executive Editor of the Bulletin of Volcanology and other publications of the Association. The Executive Committee shall have the power to create and disband Commissions and Task groups of the Association.

IV. Voting

10. Affiliates from member countries who have paid their dues for the current year and National Correspondents shall receive ballots for new office-bearers and for any proposed changes to the Association's Statutes and By-Laws.
11. Ballots will be distributed at least three months before, and must be returned no later than one month before. IUGG General Assemblies.
12. Any Affiliate or National Correspondent may nominate in writing any other current Affiliate or National Correspondent as an office-bearer of the Association provided (1) the nomination is seconded by three other current Affiliates or National Correspondents each from countries other than that of the nominee and (2) the nominee, nominator, and seconders are all from a country belonging to the union. All nominations must be received no later than six months before the General assemblies of the Union.
13. All nominations shall be considered by a Nominating Committee which will produce a shortlist of at least two, but no more than three, candidates for each of the positions on the new Executive Committee. No more than two candidates from the same country can be proposed by the Nominating Committee for all of the positions. The Nominating Committee will be appointed by the Executive Committee no later than nine months before the General Assemblies of the Union. It will consist of no less than five current Affiliates or National Correspondents, one of whom will be nominated by the Executive Committee as a Receiving Officer for postal votes. The outgoing Executive Committee has the power to appoint candidates of its own where only one, or no,

candidates are nominated by Affiliates and National Correspondents.

14. Voters shall be required to rank candidates in order of their preference. The candidate with the largest number of first-place votes will be elected in cases where there are only two candidates. In cases where there are three candidates and none has a majority of first-place votes, then the candidate with the fewest first-place votes will be eliminated. The one of the two remaining candidates having the higher number of second-place votes will be elected. The third-place votes will be used in cases where the second-place votes are equal.

V. Alteration and Interpretation of Statutes

15. These statutes shall be changed only by a majority of at least two thirds of postal votes by members of the General Assembly. Two-thirds absolute majority is determined by the proportion of affirmative votes to the sum of votes (affirmative, negative, abstention) provided that the total number of members of the General Assembly voting (affirmative, negative, abstention) is not less than one third of the total number of Affiliates and National Correspondents forming the General Assembly.
16. The English text of the present Statutes shall be regarded as the authoritative version.
17. If these Statutes are found to be in conflict with those of the Union, the latter shall have priority.

BY – LAWS OF IAVCEI

I. Membership

1. Individual countries, where appropriate, should establish Sub-Committees of their National Committee for the Union. The functions of each of the Sub-Committees for Volcanology and Chemistry of the Earth's Interior shall be as follows:
 - (1) to further the aims of the Association within their own country;
 - (2) to nominate through the National Committee a National Correspondent who will have the power to vote on behalf of the Sub-Committee and who may be designated as the Chief Delegate for that country at Union General assemblies;
 - (3) to submit topics for discussion at the General Assemblies of the Association - subjects so submitted should be notified to the Secretary General of the Association at least three months before the General Assembly;
 - (4) to facilitate and coordinate, as appropriate and necessary, the dissemination of correspondence and other information relating to the affairs of the Association.

II. Duties of Officers of the Association

2. The function of the Executive Committee is to exercise general oversight with respect to the affairs of the Association. It should meet at least twice during each General Assembly. Its duties include the following: to consider proposals for changes to the Statutes and By-Laws; to determine the annual subscription fee for Affiliates; to fill office-bearing vacancies arising between successive periods of postal voting; to assist in preparing agenda and making arrangements for General Assemblies and other meetings; to appoint a Nominating Committee for the short-listing of candidates for election as new office-bearers; to appoint the Executive editors and Associate Editors of the Bulletin of Volcanology and other publications; to appoint Commissions and Task Groups; and generally to promote the interests of the Association.
3. The function of the Bureau is to carry on the business of the Association between General Assemblies and to take on the particular responsibility of proactively fostering the objectives and interests of the Association and the effectiveness of the Commissions and Task Groups. The Bureau is responsible also for establishing Sub-Committees to deal with specific aspects of the work of the Association.
4. The duties of the President are to preside at General Assemblies of the Association and, in consultation with the Secretary General, to regulate the business of the Association. The President and Secretary-General have the power to sign documents on behalf of the Association. The President will chair the Awards Sub-Committee.
5. The duties of the Vice-Presidents are to preside at General Assemblies in the Absence of the President. In the event of the position of President becoming vacant between General Assemblies, the Executive Committee shall appoint one of the Vice Presidents to act as President until the next General Assembly. As members of the Bureau, they must foster proactively the objectives and interests of the Association, and the effectiveness of the Commissions and Task Groups.
6. The duties of the Secretary General of the Association are:
 - (1) to carry on all correspondence relating to the affairs of the Association;
 - (2) to maintain and preserve the records of the Association;
 - (3) to administer the funds of the Association, to prepare at the end of the calendar year preceding a General Assembly the accounts of the Association, and to arrange that they shall be properly audited and sent to the Secretary General of the Union;
 - (4) in consultation with the President and members of the Executive Committee, to prepare the agenda and make arrangements for the next General Assembly, and to cooperate with the other Associations of the Union in arranging joint sessions;
 - (5) to ensure that the annual reports of the Association are published and distributed;
 - (6) to prepare a budget for the ensuing four-year term.

7. The duties of the Deputy Secretary are to assist the Secretary General, to maintain a mailing list of members of the Association, and to receive and process Affiliate applications. The Deputy Secretary normally would be appointed Secretary General in the event of that position becoming vacant between General Assemblies.
8. The Executive Editor of the Bulletin of Volcanology shall administer the process of receipt of manuscripts and their distribution to the Associate editors for review and acceptance (or otherwise). The Executive Editor and Associate Editors shall be responsible for maintaining high standards of content and presentation of the Bulletin of Volcanology. The tenure of the Executive Editor normally would not exceed eight years. The Executive Editor is empowered to sign documents on behalf of the Association that are pertinent to the Bulletin of Volcanology and any other Association-sponsored publications. The Executive Editor and the Executive Committee jointly will appoint Associate Editors who will serve for periods not exceeding eight years.
10. The Executive Committee may establish Task Groups devoted to the short-term completion of specific scientific tasks. This will include the preparation, by any interested group, of the objectives, program, and proposed membership of a future Commission for consideration by the Executive Committee.
11. The Bureau may establish Sub-Committees devoted to the completion of specific administrative tasks. These will include the Awards Sub-Committee whose responsibility, under the chairmanship of the President, is to prepare recommendations for the award of the Thorarinsson Medal and Wager Medal at the time of the Association's General Assemblies held between IUGG General Assemblies.

III. Commissions, Task Groups, and Sub-Committees

9. The Executive Committee may establish any Commission devoted to the international promotion of research in any specialty of volcanology and chemistry of the Earth's interior. It will appoint a scientist to lead each Commission. This leader will present proposals for the objectives, program, and membership of the Commission on approval by the Executive Committee. Leaders normally will serve for periods not exceeding four years.

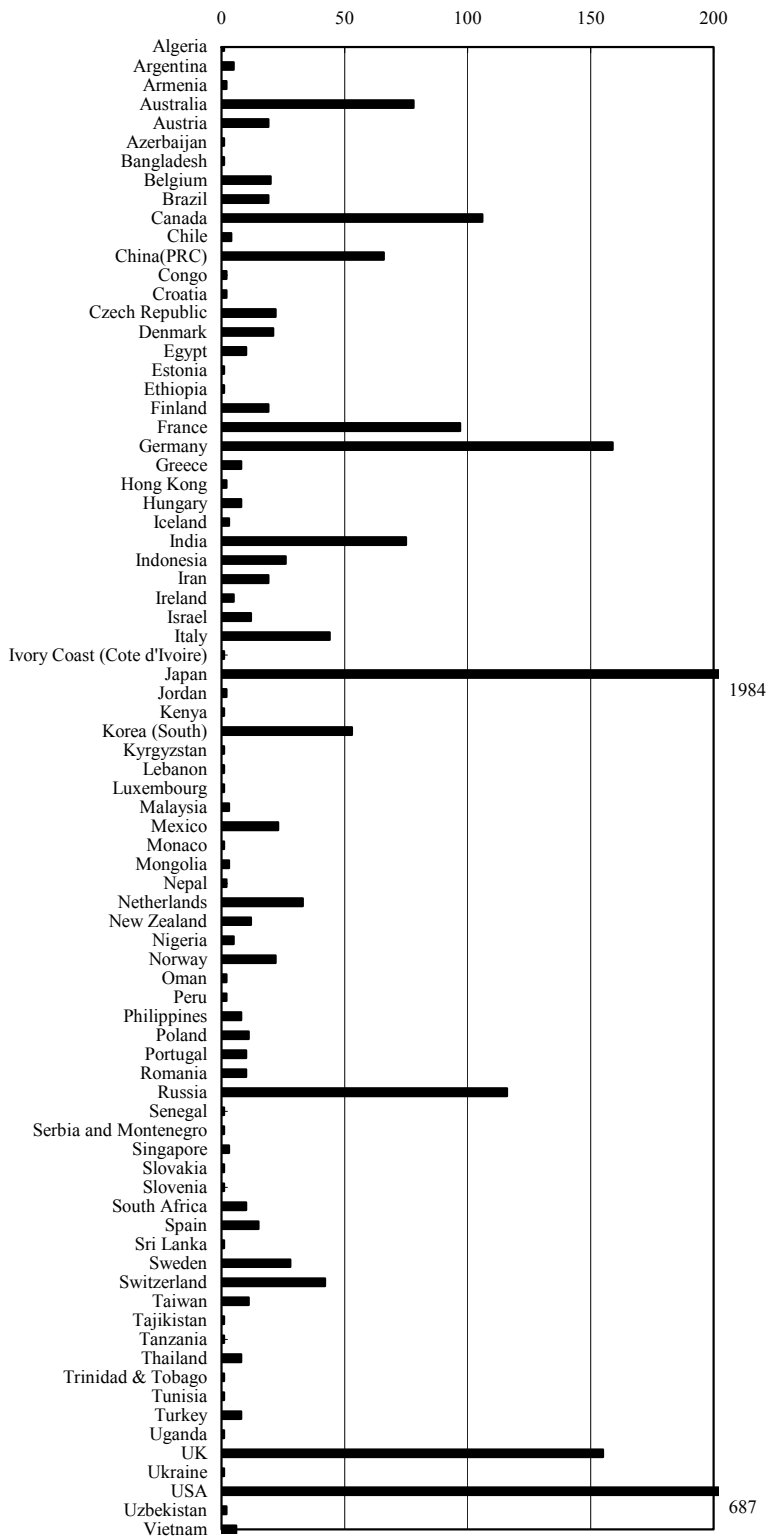
IV. Alteration and interpretation of By-Laws

12. These By-Laws shall be changed only by a simple majority of postal votes by current Affiliates and National Correspondents. Simple Majority is determined by the Proportion of affirmative votes (affirmative, negative, abstention), provided that the total number of members voting (affirmative, negative, abstention) is not less than one-quarter of the total number of current Affiliates and National Correspondents of the Association. Any Affiliate or National Correspondent may propose in writing alteration, or alterations, to these By-laws, provided the proposal is seconded (in writing) by three other current Affiliates or National Delegates. The Executive Committee shall have the power to decide whether the proposal will be distributed to members as a postal vote.

PART III

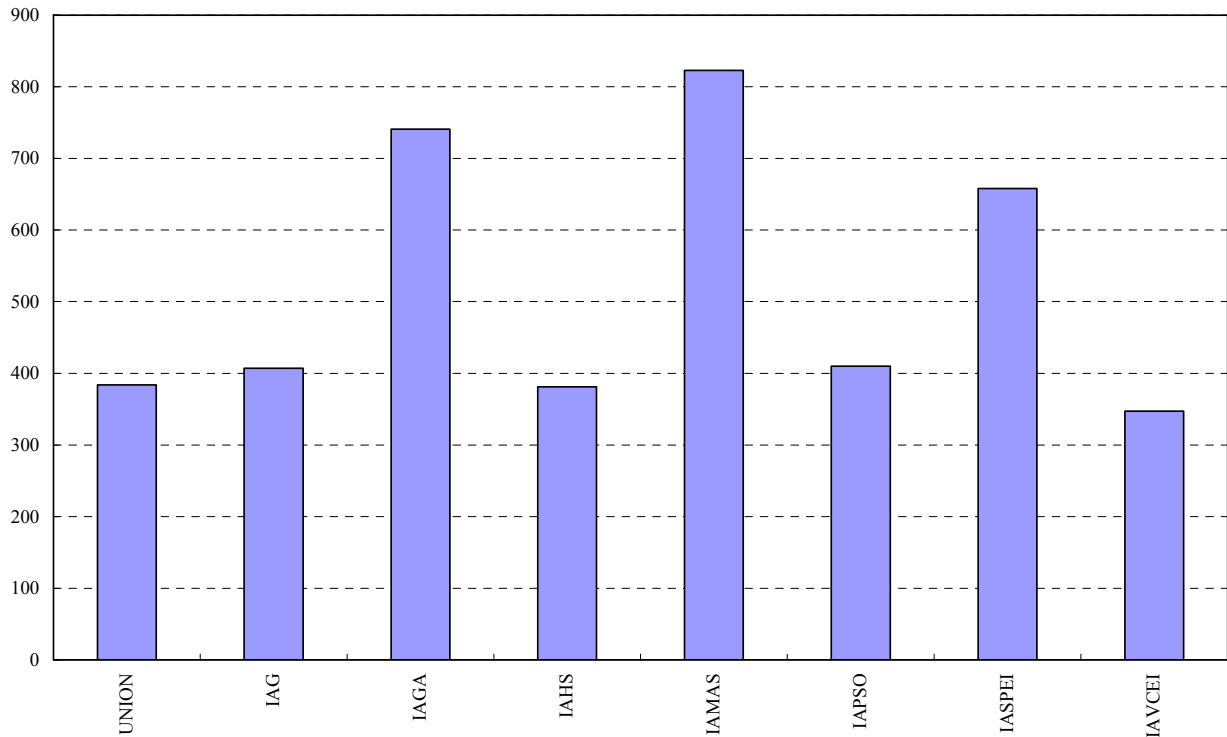
Assembly Registrants

ASSEMBLY REGISTRATION BY COUNTRY



Algeria	1	Malaysia	3
Argentina	5	Mexico	23
Armenia	2	Monaco	1
Australia	78	Mongolia	3
Austria	19	Nepal	2
Azerbaijan	1	Netherlands	33
Bangladesh	1	New Zealand	12
Belgium	20	Nigeria	5
Brazil	19	Norway	22
Canada	106	Oman	2
Chile	4	Peru	2
China(PRC)	66	Philippines	8
Congo	2	Poland	11
Croatia	2	Portugal	10
Czech Republic	22	Romania	10
Denmark	21	Russia	116
Egypt	10	Senegal	1
Estonia	1	Serbia and Montenegro	1
Ethiopia	1	Singapore	3
Finland	19	Slovakia	1
France	97	Slovenia	1
Germany	159	South Africa	10
Greece	8	Spain	15
Hong Kong	2	Sri Lanka	1
Hungary	8	Sweden	28
Iceland	3	Switzerland	42
India	75	Taiwan	11
Indonesia	26	Tajikistan	1
Iran	19	Tanzania	1
Ireland	5	Thailand	8
Israel	12	Trinidad & Tobago	1
Italy	44	Tunisia	1
Ivory Coast (Cote d'Ivoire)	1	Turkey	8
Japan	1984	Uganda	1
Jordan	2	UK	155
Kenya	1	Ukraine	1
Korea (South)	53	USA	687
Kyrgyzstan	1	Uzbekistan	2
Lebanon	1	Vietnam	6
Luxembourg	1		

Attendance of the 23rd General Assembly of IUGG 2003, by Country

ASSEMBLY REGISTRATION BY ASSOCIATION**AFFILIATIONS OF REGISTRANTS AT 23RD GENERAL ASSEMBLY**

UNION	384
IAG	407
IAGA	741
IAHS	381
IAMAS	823
IAPSO	410
IASPEI	658
IAVCEI	347

Total Scientific Registrants	4151
Accompanying People	181

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