

IAGA Division V Business Meeting

Monday, August 27, 2001, Hanoi, Vietnam

SUMMARY

Reports from the WG Business Meetings:

WG V-1(Jean Rasson):

- Use of the joint IAGA-WDC List of Standard Magnetic Observatories and Variation Stations.
- Standard registration of a new observatory or variation station (that is, assigning the IAGA 3-letter code) is now required through the WG V-1 and NGDC (WDC for SE in Boulder, CO).
- Hourly means should NOT be calculated if LESS than 90% of the data is available; for example, an hourly mean should be declared missing if less than 54 min are available in the hour to compute it.
- Possible establishment of a standard magnetic observatory in Thailand was discussed, and if the establishment of a standard magnetic observatory is proposed in Thailand, Chulalongkorn University will investigate the possibility.
- Kakioka invites the XI IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing in 2004.
- Two applications are received for the XII IAGA Workshop in 2006: from Belsk (Poland) in conjunction with the 50-years anniversary in 2006, and from Alibag (India) in conjunction with 100-years anniversary in 2005.
- Grocka (Yugoslavia) is intended to become INTERMAGNET Observatory; ELGI (Hungary) helps it with the instrumentation and application.
- NASA conveyed their interest in 1-sec ground geomagnetic data to INTERMAGNET. The WG recommends observatories to move to the 1-sec sampling rate as much as possible.

WG V-2 (Toby Clark):

- The latest revision of the IAGA-2001 Geomagnetic Data Exchange Format is finally approved (with some comments regarding the DOY and file-naming convention); it is recommended to announce the IAGA-2001 format by November 1, 2001.
- Questionnaire on Use of Geomagnetic Indices is continued (Richard Holme and Chris Balch)
- Rescue of Old Magnetograms to Digital Images - Task Force Group is established (Volodya Papitashvili, Tohru Araki, Toshi Iyemori, Nandini Nagarajan, and Juan José Curto)
- The WG took note of the development of an observatory data processing software package developed by the Geomagnetic Group of USGS and organizations willing to experiment with this package are requested to contact Don Herzog.
- Reports from ISGI (M. Menvielle and H.-J. Linthe) regarding routine preparation of various geomagnetic indices.

WG V-3(Alan Thomson):

- A list of Geomagnetic Variations Models and corresponding publications is now available from the WG Web site http://www.nmh.ac.uk/iaga_wgv3.html.
- The ISO Requirements for a standard Earth's Magnetospheric Field Model were discussed (following a presentation by Don Herzog on behalf of John Quinn); it was decided to learn more about the ISO procedure; A. Thomson and V. Papitashvili were asked to attend the ISO WG-4 meeting in Toulouse, France (October 8-10, 2001) and then proceed with the establishment of the IAGA WG V-3 Task Force.

WG V-7(Mioara Manda for Yves Cohen):

- Brief on the Magnetic Satellite Missions and Surveys from E. Friis-Christensen and G. Hulot.

WG V-8(Mioara Manda):

- IGRF and DGRF models for 20th Century – Task Force is needed to address if there is a necessity to revise the entire, century-long series of models.
- Recommended extending the IGRF/DGRF models to the 13-th degree starting from DGRF-2000; for the SV models - leave the 8-th degree as the highest one. Both, IGRF/DGRF and SV models should have the same resolution of 0.1 nT.
- Call for DGRF-1995 and (possibly) for DGRF-2000.
- No need is found in having IGRF for shorter than 5-year intervals; same for the external sources in the IGRF/DGRF models.

WG V-9(Monika Korte):

- Discussion on the progress towards a world anomaly map and release of existing commercial data
- Ash Johnson resigned from the WG chairmanship (moved mainly to business). Monika Korte was promoted as a new Chair, with Mita Rajaram as a Co-Chair.

Working Group V-9: Magnetic Anomalies (Land and Sea)

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Chairmen brief report on the Division V activities in 1999-2001

(V. Papitashvili and T. Iyemori)

Scientific “outputs” and achievements:

- A new index of the Polar Cap Magnetic Activity Index (PC) was recommended to IAGA in Birmingham (August 1999).
- IGRF-2000 was prepared and the coefficients were announced (via the WG V-8 Web site) in November 1999; for the first time, the journal publication with the IGRF Model (8th generation) has been published before the new 5-year period started – see *Earth, Planets and Space*, 52, 1117-1233, 2000; Guest Editors: Mioara Manda, Susan Macmillan, and Frank Lowes.
- A new geomagnetic data exchange format IAGA-2000 was developed and widely discussed by the geomagnetic community; the format formal endorsement is expected here, in Hanoi.
- A complete list of magnetic observatories (currently in operation and existed in the past) is prepared by WG V-1 to share with the WDC system; it is agreed that now IAGA (via Division V) will authorize assignment of the IAGA 3-letter codes (together with WDC/NGDC).

- A new project is initiated in 2001: A “rescue” operation in converting old (mainly pre-IGY) analogue magnetograms to digital images.

Significant involvement in scientific meetings and/or workshops:

- IAGA (through Division V) sponsored the IXth Workshop on Geomagnetic Observatory Instruments, data Acquisition and Processing held at the Hurbanovo Magnetic Observatory in Slovakia, June 12-18, 2000.
- The "Xth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing will be held at the Hermanus Magnetic Observatory in 2002.

Joint work or involvement with other bodies, e.g. SEDI, COSPAR:

- WG V-8 works in close contact with SEDI.
- After the Symposium at the IUGG General Assembly in Birmingham, the Division V Chair co-edited a special issue of the Journal of Atmospheric and Solar-Terrestrial Physics:
- Tsurutani, B. T., V. O. Papitashvili, J. Lastovicka, Y. I. Feldstein, Interplanetary medium and geophysical phenomena during geomagnetic storms, *J. Atmos. Solar-Terr. Phys.*, 63, No. 5, 387, 2001.

Looking forward, what are the major science issues are likely to influence the Division V scientific programme for Sapporo and beyond?

- In response to the IUGG “State of the Planet” initiative, the Division V proposes IAGA focusing on the following major themes:
 1. Dynamics of the Earth’s Interior and Geomagnetic Dynamo.
 2. Electrodynamics and Plasmadynamics in Geospace Environment.
 3. Solar Forcing on Climate Changes.
 4. Geomagnetic Field as a Protecting Shield for Life and Technology.
 5. Solar-Planetary Relationships and Space Physics.
- An advent of affordable super-computers allows modeling the Earth’s interior and geomagnetic dynamo addressing the historical development of the planet. The geospace environment can also be modeled now through the powerful MHD codes allowing simulation of the entire chain of events - from the solar corona to the solar wind-magnetosphere-ionosphere interaction. Global warming becomes an important issue; IAGA should focus on the solar forcing on climate changes in a hope to resolve this issue - Does this forcing exist at all? IAGA should more actively encourage research in how the life and technological systems are protected by the existence of geomagnetic field, when without that shield the Earth’s atmosphere may quickly deteriorate by the impact of charged particles from space. Solar-planetary relations are not covered neither by astronomical unions nor IAGA; it is worth to consider if this issue is in the scope of the IAGA activities.

Practical Organizational Matters for Division V

A plan for the Division V restructuring is developed with a goal to make our working groups “leaner, focused, in action”. It is proposed to reduce the number of Working Groups to three or four, focusing their activities on the major scientific issues important for the IAGA response on the current and emerging scientific and societal needs. The proposed new structure of Division V aims on the start thinking if reorganization is necessary, we will discuss these issues via e-mail in next two years, but come to any decision in Sapporo, in 2003. Two version of the reorganization are proposed:

Version 1:

WG V-GMO Working Group on Geomagnetic Observations

- WG V-1: Geomagnetic Observatories, Instruments and Standards

- WG V-7: Earth and Planetary Magnetic Survey Satellites
- WG V-9: Magnetic Anomalies (Land and Sea Surveys)

WG V-GMD Working Group on Geomagnetic Data

- WG V-2: Geomagnetic Data, Indices and Applications
- Interaction with the World Data Center System

WG V-MFM Working Group on Geomagnetic Field Modeling

- WG V-8: Analysis of Global and Regional Geomagnetic Fields and Secular Variation
- WG V-3: Analysis and Modeling of Geomagnetic Field Variations
- WG V-9: Magnetic Anomalies (Global Digital Map)

Version 2:

WG V-A Working Group on Instruments, Observations, Data, and Indices

- WG V-1: Geomagnetic Observatories, Instruments and Standards
- WG V-2: Geomagnetic Data, Indices and Applications

WG V-B Working Group on Global and Regional Geomagnetic Fields and Secular Variation

- WG V-8: Analysis of Global and Regional Geomagnetic Fields and Secular Variation
- WG V-7: Earth and Planetary Magnetic Survey Satellites

WG V-C Working Group on Geomagnetic and Magnetospheric Field Variations and Models

- WG V-3: Analysis and Modeling of Geomagnetic Field Variations

WG V-D Working Group on Geomagnetic Anomalies and Surveys

- WG V-9: Magnetic Anomalies (Land and Sea)

IGA Assessment of the New IUGG Meeting Format - "State of the Planet" as of the Overall Theme (presented by David Kerridge)

Division V Resolutions for IAGA

Four resolutions were proposed from the Working Groups:

WG-1 proposed the following resolution:

- IAGA, knowing that the up-to-date magnetic declination is important for aircraft security, urges the International Civil Aviation Organization (ICAO) to promote geomagnetic observatories in the aeronautical sector as the source of accurate magnetic data in airports and VOR stations and for computing aircraft headings and charts. It is recommended to do such measurements at airports not less than 1-year and involve national and international geomagnetic observatories.

After discussion, the Division has **not supported** this resolution; instead it has recommended the WG-1 Chair to contact ICAO and see what is the actual need of this organization in geomagnetic data. The exchange of the letters between the ICAO authorities and the IAGA President could resolve this issue as well.

WG-2 proposed the following resolution:

- IAGA, noting a recent success of satellite missions in mapping the earth's magnetic field, and recognizing the essential role of magnetic observatories as a ground-based support of satellite surveys, urges that these two global datasets are complementary in the analyses and modelling of geomagnetic field on global and regional scales.

The resolution was **accepted** after some discussion and then conveyed to the IAGA Resolution Committee.

WG-7 proposed the following resolution:

- IAGA, recognizing the efforts recently made by various space agencies to acquire high-precision global observations from space of the earth's magnetic field to initiate the present "International Decade of Geopotential Field Research, noting the resulting significant advancements in our ability to model and understand the earth's magnetic field and its time variations, and noting the scientific potential of continuous high-precision geomagnetic measurements during this decade with adequate spatial coverage, urges the major space agencies to include high-precision mapping of the geomagnetic field, its spatial distributions, and its temporal variations as a high-priority scientific issue.

The resolution was **accepted** and conveyed to the IAGA Resolution Committee.

WG-9 proposed the following resolution:

- IAGA, considering the importance of magnetic anomaly mapping for global geological and tectonic interpretation, and noting the existence of numerous sets of low-level airborne and marine magnetic anomaly data and the rapid progress being made in retaining and compiling existing datasets, regrets that many datasets still remain classified or confidential even after they have outlived their original purpose of acquisition, and in view of the fact that the situation has not significantly improved, urges the custodians of such datasets to release them (or their non-sensitive versions) into the public domain as soon as possible, by developing mechanisms for the data release. .

The resolution was discussed, **accepted** and then conveyed to the IAGA Resolution Committee as a possible IUGG resolution for Sapporo, 2003.

Proposed Symposia for the IUGG General Assembly, Sapporo, Japan, 2003

Session	Title	Days	Conveners
G.5.1	WG V-1: Global Geomagnetic Observatory: Towards a Better Ground-Based Network of Geomagnetic Observations	1.0	Ellen Clarke (UK) e.clarke@bgs.ac.uk Yang Dongmei (China) Valery Korepanov (Ukraine)
G5.2	WG V-2: Geomagnetic Indices: Real-Time Production and Forecasting	0.5	Christopher Balch (USA) christopher.balch@noaa.gov Nandini Nagarajan (India)
G5.3	WG V-3: The Geospace Environment in Near-Real Time: Science and Technology (Division V lead, joint with Division III, Interdivisional WG on Polar Research, and CEOS)	2.0	Tatsuki Ogino (Japan) ogino@stelab.nagoya-u.ac.jp David Boteler (Canada) Robert Clauer (USA) Herbert Kroehl (USA) Hannu Koskinen (Finland)
G5.4	WG V-7: International Decade of Geopotential Field Research - First Five Years - Advances and Understanding of	0.5	Stefan Maus (Germany) smaus@gfz-potsdam.de Naphsica Grammatica (Denmark) Mohamed

	Geomagnetic Field		Hamoudi (Algeria)
G5.5	WG V-8: Modelling the Earth's Magnetic Field on Global and Regional Scales	1.5	Richard Holme (Germany) holme@gfz-potsdam.de Benoit Langlais (France)
G5.6	WG V-9: Magnetic Surveys for Regional Evaluation, Geohazards, and Environmental Investigation	1.0	Shigeo Okuma (Japan) s.okuma@aist.go.jp Massimo Chiappini (Italy) Rick Saltus (USA)
G5.7	WG V-9: Magnetic Anomalies and Rock Properties	0.5	Tien Grauch (USA) tien@usgs.gov Meri-Liisa Airo (Finland)
G5.8	WG V-9: Regional Crustal Models Based on Seismic, Electromagnetic, and Potential Field and Heat Flow Studies (joint with IASPEI)	1.0	Juha Korhonen (Finland) juha.korhonen@gsf.fi Friedemann Freund (US) Walter Mooney (USA)
Total	Eight symposia, including two joint	8	Days

Note: Here we leave some time for the IUGG-wide symposia dedicated to the "State of the Planet" initiative, though the actual scheduling will be finalized in Spring 2003.

Any other business?

IAGA requested Divisions to provide a short list of candidates for the IAGA Young Scientists Committee (10-15 people), which will deal with the IAGA future directions and focuses; Division V provided seven candidates to the IAGA Executive Committee for further selection.

Electronic or Digital IGY - Status of IGY+50 International Program

· CAWSES – Climate and Weather of the Sun-Earth System – a SCOSTEP proposal for the long-term program (2003–2007): <http://www.ngdc.noaa.gov/stp/SCOSTEP/CAWSESDraft.html>