

# Annual Report for 2015

## International Association of Geomagnetism and Aeronomy

### 1. INTRODUCTION

**IAGA**, the International Association of Geomagnetism and Aeronomy (AIGA - Association Internationale de Géomagnétisme et d'Aéronomie) is one of the eight Associations of the International Union of Geodesy and Geophysics (IUGG). It is a non-governmental body funded through the subscriptions paid to IUGG by its Member Countries. IAGA has a long history and can trace its origins to the Commission for Terrestrial Magnetism and Atmospheric Electricity, part of the International Meteorological Organisation, which was established in 1873.

IAGA is the premier international scientific association promoting the study of terrestrial and planetary magnetism, and space physics. IAGA is concerned with the understanding and knowledge that result from studies of the magnetic and electrical properties of:

- the Earth's core, mantle and crust
- the middle and upper atmosphere
- the ionosphere and the magnetosphere
- the Sun, the solar wind, the planets and interplanetary bodies.

### 2. ADMINISTRATION

Since 2015, IAGA is organised in six Divisions and four Inter-divisional Commissions, each led by a Chair and a Co-Chair. Each Division/Commission may form Working Groups in given specialised topics and elects officers to run the business of the Working Groups. During the XXVI IUGG General Assembly in Prague (2015), IAGA renewed its officers. The links below lead directly to lists of the Division/Commission leadership and the Working Group names and officers:

[http://www.iugg.org/IAGA/iaga\\_pages/science/sci\\_structure.htm](http://www.iugg.org/IAGA/iaga_pages/science/sci_structure.htm)

IAGA is administered by an Executive Committee on behalf of IUGG Member Countries in accordance with the Association's Statutes and By-Laws. The election process was conducted by Jan Lastovicka on behalf of the Nominations Committee Chair, Charles Barton, and approved by the Conference of Delegates. The newly elected Executive Committee members are:

**President:** Eduard Petrovsky (Czech Republic)

**Vice-President:** Monika Korte (Germany)

**Members:** Inez Batista (Brazil), Archana Bhattacharyya (India), Brian J.Fraser (Australia), Pieter Kotze (South Africa), Renata Lukianova (Russia), Alan Thomson (UK), and Andrew Yau (Canada).

IAGA communicates with Member Countries through National Correspondents nominated by appropriate national bodies. Member Countries are represented at IAGA Assemblies by accredited Chief Delegates who may vote on matters, according to the voting rules set out in the Statutes and By-Laws, at meetings of the Conference of Delegates. Information on the EC members and National Correspondents are found at:

[http://www.iugg.org/IAGA/iaga\\_pages/science/sci\\_structure.htm](http://www.iugg.org/IAGA/iaga_pages/science/sci_structure.htm)

### 3. ACTIVITIES

The highlights of the IAGA year have to be the excellent General Assembly in Prague, the second IAGA summer school, and new results of the 2-year ESA's Swarm constellation measurements.

#### **The IUGG 2015 General Assembly**

The Scientific Program of IUGG 2015 involved more than 4300 participants from 90 countries. Almost 5400 contributions out of more than 5700 submissions were presented, in a total of 202 symposia and workshops. The IAGA presence was remarkable, as IAGA scientists were involved in organising 7 from the total of 11 Union symposia, and led 6 Inter-Association symposia; the IAGA only part of the meeting consisted of 43 symposia, subdivided into several parts, spanning the full range of IAGA science interests.

The IAGA programme efficiently run in over the first part of the meeting, held in a conference centre which provided an excellent space for poster viewing and the exhibition, as well as plenty of varied sized rooms for oral presentations. This gave us the chance to catch up with latest developments in our own research, as well as take in some of the more interdisciplinary topics. The meeting provided many opportunities for scientists to discuss different topics, over breaks, poster sessions, and the IAGA special dinner.

In Prague, it was a pleasure to recognise the achievements of IAGA scientists at all stages of their careers at the Open and Awards ceremony and IAGA dinner. The Shen Kuo Medal for Interdisciplinary Achievements was awarded Dan Baker (US), the IAGA Long Service Medal honored Hans-Joachim Linthe (Germany) and John Riddick (UK), and the IAGA Young Scientist Award was given to Erin Dawkins (UK), Remi Thieblemont (Germany), Israel Silber (Israel), Maria Mendakiewicz (Poland). Vaclav Bucha (Czech Republic), Eigil Friis-Christensen (Denmark) and Michel Menvielle (France) were elected as Honorary Members of IAGA, by virtue of their respective outstanding scientific contributions to geomagnetism and aeronomy as well as their long-time outstanding contributions to IAGA.

#### *Conference of Delegates of the IAGA*

Two meetings of the Conference of Delegates of the IAGA were held during the IAGA Scientific meeting, the first on Tuesday 23 June 2015 and the second on Saturday 27 June 2015. A very brief summary of the topics discussed and decisions and recommendations made can be found in **IAGA Newsletters no 52**.



*IUGG Opening Ceremony, with Vladimir Cermak (Chair, LOC IUGG 2015), Alik T. Ismail-Zadeh (IUGG Secretary-General) and Harsh Gupta (IUGG President).*



*Award Ceremony (Mioara Manda – IAGA Secretary General), Dan Baker (Shen Kuo Medallist), Kathy Whaler (IAGA President).*



*Conference of Delegates of the IAGA*



*2<sup>nd</sup> IAGA school: Students and lectures*





## **2<sup>nd</sup> IAGA Summer School**

The second IAGA School took place also in Prague, June 15-21. The Summer School was very successful, based on feedback received to date. Twenty-two students from 14 countries (of 13 nationalities) participated; most were nominated by Division and Working Group Chairs. Seven lectures, followed by practical and computational exercises, by distinguished experts covered a large variety of IAGA topics. The students stayed in same hotel; this greatly prompted friendship and networking among them.

The whole event took place in a very informal and friendly — though hard-working! — atmosphere. Not only the students, but also the lecturers enjoyed the event very much. All the students became highly visible during the IUGG General Assembly. The Summer School's success depended on Monika Korte's efforts to ensure it went ahead.

## **Swarm**

ESA selected Swarm as the fifth explorer mission in ESA's Living Planet Programme. The mission consisting of three spacecraft was successfully launched on November 22, 2013. This constellation, which comprises three satellites at low Earth polar orbits, with two spacecraft flying side-by-side at low altitude (about 460km), and one flying at a slightly higher altitude (510km), provides high-precision and high-resolution measurements of the strength, direction and variation of the magnetic field, complemented by precise navigation, accelerometer and electric field measurements. These, and the constellation configuration, make it possible to separate and model the various sources of the geomagnetic field and investigate the in situ behaviour of the ionosphere.

During 2015, the three Swarm satellites have provided data used in many studies. Interesting results have been published in a special GRL issue( series of papers presenting the mission, some of its innovating instruments and the very first results and conclusions derived from the

first year of Swarm in space), or presented at the 26th General Assembly of IUGG, EGU 2015, AGU 2015 meetings, and during the 5th meeting of the QWG (Quality Working Group) at IPGP, Paris.



## Sponsored Topical Meetings

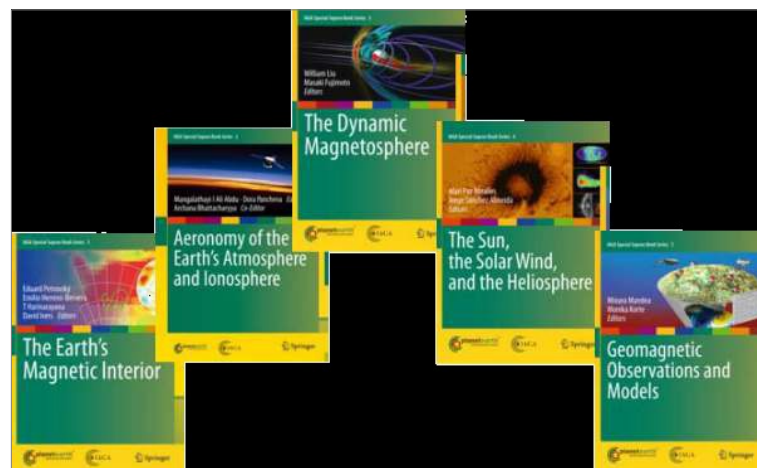
IAGA sponsored a topical meeting during 2015:

6-13 Septembre, 2015 Mamaia (Romania)	International Workshop and School on Solar system plasma turbulence, intermittency and multifractals
------------------------------------------	------------------------------------------------------------------------------------------------------

## Publications

### *IAGA books*

One of the most important achievements of IAGA was to publish, with Springer, a series of five books, summarizing the state of the science of the IAGA five divisions. As well as providing useful reference texts, the income to IAGA from Springer for this venture was used to support scientists attending the last Scientific Assembly in Sopron, Hungary.

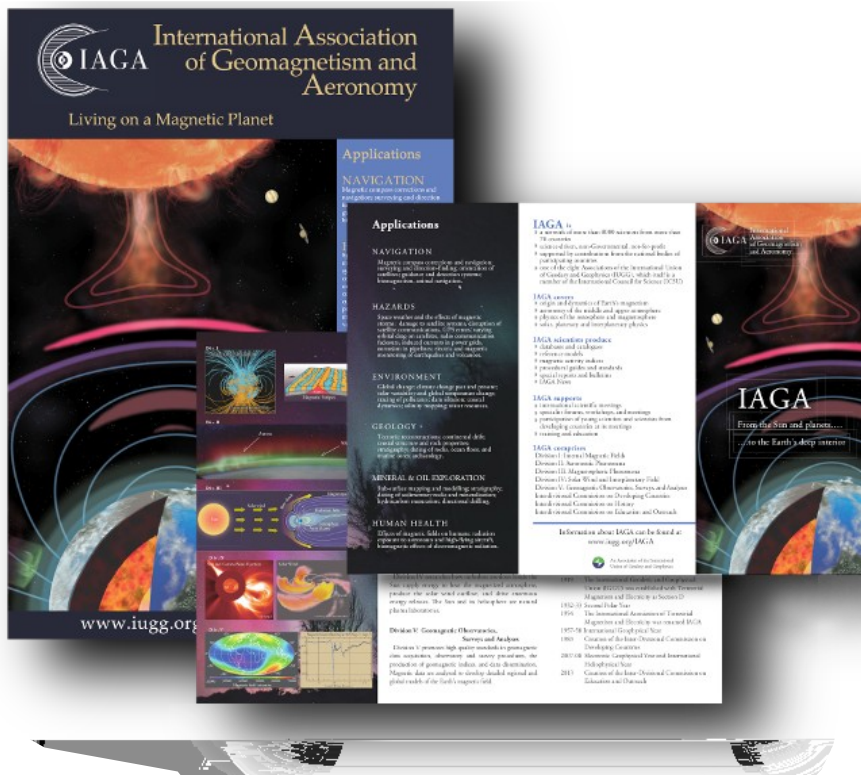


### *IAGA Newsletters 52*

The last issue of IAGA Newsletters was distributed at the end of December 2015. It can be downloaded from the IAGA web site [www.iugg.org/IAGA](http://www.iugg.org/IAGA). Among other things, reports from EC and CoD meetings can be found there.

### *New Flyer and Poster*

thA new version of the IAGA flyer was agreed upon by the EC.



## 4. FUTURE ACTIVITIES

### Preparations for IAGA 2017

Conference of Delegates approved the proposal to hold Aa joint Scientific Assembly with IAMAS and IAPSO will be organised in Cape Town in 2017. The organisation will be complex and challenging, but the potential benefits to our science are enormous. It will be the first time IAGA has held an Assembly in Africa.

The XXVI General Assembly of the IUGG will take place in Prague from June 22 to July 2, 2015. IAGA works on the scientific programmes in order to offer to its members an exciting multi-disciplinary conference.

Mioara MANDEA  
IAGA Secretary General