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The *IAG Newsletter* is under the editorial responsibility of the *Communication and Outreach Branch* (COB) of the IAG.

It is an open forum and contributors are welcome to send material (preferably in electronic form) to the IAG COB ([newsletter@iag-aig.org](mailto:newsletter@iag-aig.org)). These contributions should complement information sent by IAG officials or by IAG symposia organizers (reports and announcements). The *IAG Newsletter* is published monthly. It is available in different formats from the IAG new internet site: <http://www.iag-aig.org>

Each *IAG Newsletter* includes several of the following topics:

- I. news from the Bureau Members
- II. general information
- III. reports of IAG symposia
- IV. reports by commissions, special commissions or study groups
- V. symposia announcements
- VI. book reviews
- VII. fast bibliography

Books for review are the responsibility of:

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## General Announcements

### *English translation of Helmert, Geodesy, Vol. 1*

The Aeronautical Chart and Information Center (ACIC) translation of

F. R. Helmert: Die Mathematischen und Physikalischen Theorien der Höheren Geodäsie (Mathematical and Physical Theories of Higher Geodesy), Vol. 1 (Teubner, Leipzig, 1880)

is available at <http://geographiclib.sf.net/geodesic-papers/helmert80-en.pdf> (70 MB).  
(The translation is a work of the US Government, so it's not covered by copyright.)

Notes:

- The table of contents and the cross-references in the text use the page numbers from the original book. This pagination is indicated in the translation by the numbers above and below the horizontal lines in the text.
- The formulas have been cut and pasted (in the old-fashioned way!) from the book. In some cases these are barely legible. Go to the German text to disambiguate these; see <http://books.google.com/books?id=qt2CAAAIAAJ>
- This PDF has 949 pages. However, the scan is perfectly legible when printed 2-up (2 pages per sheet). This should work OK with A4 and US letter sizes.

CHARLES KARNEY  
SRI International, Princeton

## Meeting Announcements



*2011 IAG General Assembly  
at IUGG2011: "Earth on the Edge: Science for a Sustainable Planet"  
Melbourne Convention and Exhibition Centre, Australia  
28<sup>th</sup> June – 7<sup>th</sup> July, 2011*

- Early Bird Registration Deadline 11 April 2011
- Standard Registration Deadline 24 June 2011
- Conference website: <http://www.iugg2011.com>
- Scientific program of symposia, workshops, fieldtrips, symposia convenors, plenary and keynote speakers already available on website

**The IAG Scientific Program consists of the following program of symposia:**

**IAG ONLY SYMPOSIA** (see website [www.iugg2011.com](http://www.iugg2011.com) under Scientific Program for symposia descriptions, convenors names and Keynote Speakers)

- G01** Reference Frames from Regional to Global Scales
- G02** Monitoring and Modelling of Mass Displacements by Geodetic Methods
- G03** Monitoring and Modelling Earth Rotation
- G04** Multisensor Systems for Engineering Geodesy
- G05** Geodetic Imaging Techniques
- G06** Towards a Unified World Height System
- G07** High Precision GNSS

**IAG - JOINT ASSOCIATION SYMPOSIA** (see website [www.iugg2011.com](http://www.iugg2011.com) under Scientific Program for symposia descriptions, convenors names and Keynote Speakers)

- J-G01** Space Geodesy-based Atmospheric Remote Sensing as a Synergistic Link between Geodesy and Meteorology
- J-G02** Application of Geodetic Techniques in Cryospheric Studies
- J-G03** History of Geosciences from Terrestrial to Spaceborne Observations
- J-G04** Structure and Deformation of Plate Interiors
- J-G05** Integrated Earth Observing Systems
- J-G06** Tectonic Geodesy and Earthquakes

The theme for **the IUGG2011** conference at large is “*Earth on the Edge: Science for a Sustainable Planet*”. IUGG2011 will be the largest multi-disciplinary geophysical meeting to be held in Australia, and in excess of 3,000 delegates are expected to attend. In addition to the IAG specific program outlined above, the scientific program will address many of the environmental, sustainability and hazard issues facing the Earth, including climate change, extreme weather events, melting glaciers and ice-caps, rising sea-levels, water in arid countries, earthquake hazards and tsunamis, and volcanic hazards, processes and natural resources. It should thus be a fantastically stimulating conference.

**The conference website is** at <http://www.iugg2011.com>, with information about the conference, the scientific program of symposia, workshops and fieldtrips, and listings of the symposia convenors and Keynote Speakers. On-line registration for the conference opened on the website on 16<sup>th</sup> August, as well as for fieldtrips, social touring, and accommodation.

The Organising Committee of IUGG2011 looks forward to welcoming the international volcanology and geoscience community to the 2011 IAG and IUGG General Assembly in Melbourne.

RAY CAS  
Chair, Joint Australia and New Zealand Organising Committee IUGG2011

### *2<sup>nd</sup> GIA Modeling Training School, Gävle, Sweden, 13-17th June 2011*

The main objective of this Training School is to give early-stage researchers whose principal area of expertise is not in GIA modeling an intensive training on numerical GIA modeling. The training will not be limited to the solid-earth deformation process of GIA only, but will also involve glaciological modeling of the disappearing Late-Pleistocene ice sheets on the one hand and GIA-induced sea-level change on the other hand. The School is sponsored by COST Action ES0701 and further information may be found at <http://tinyurl.com/2f6k2xu>. Application deadline is **March 1, 2011**.

MATT KING  
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Newcastle University

## *IGAG Sponsored Meetings*

### 1<sup>st</sup> International Workshop on The Quality of Geodetic Observation and Monitoring Systems

*April 13-15, 2011, Garching/Munich, Germany*

URL: <http://www.gih.uni-hannover.de/qugoms2011>

### 17<sup>th</sup> International Workshop on Laser Ranging and 23<sup>rd</sup> General Assembly of the International Laser Ranging Service

*May 15-20, 2011, Bad Kötzing, Germany*

URL: <http://www.fs.wetzell.de/veranstaltungen/slr/17thlaserworkshop/index.html>

### EUREF 2011 Symposium

*May 25-28, 2011, Chisinau, Republic of Moldova*

URL: <http://www.euref-igag.net/>

### XXV IUGG General Assembly

*June 27 – July 8, 2011, Melbourne, Australia*

URL: <http://www.iugg2011.com/>

### 2011 IAG General Assembly

*at IUGG2011: “ Earth on the Edge: Science for a Sustainable Planet”*

*Melbourne Convention and Exhibition Centre, Australia*

*June 28 – July 7, 2011*

The next IAG General Assembly will be held as part of the major IUGG2011 international conference at the new Melbourne Convention and Exhibition Centre from 28<sup>th</sup> June to 7<sup>th</sup> July, 2011. IUGG (or the International Union for Geodesy and Geophysics) is a collaborative grouping of eight scientific learned societies or associations. The conference website is now open at <http://www.iugg2011.com>. On-line registration for the conference opened on the website on 16th August.

### SIRGAS General Meeting 2011

*August 8-10, 2011, Heredia, Costa Rica*

URL: <http://www.sirgas.org/>

### Joint International Symposium on Deformation Monitoring

*November 2-4, 2011, Hong Kong, China*

URL: <http://dma.lsgu.polyu.edu.hk/>

## *IGAG Related Meetings*

### Munich Satellite Navigation Summit 2011

*March 1-3, 2011, Munich, Germany*

URL: <http://www.munich-satellite-navigation-summit.org/>

### SARAL/AltiKa Science Workshop

*March 15-17, 2011, Ahmedabad, India*

Contact: [Franck Mercier](#)

### 20<sup>th</sup> EVGA Meeting & 12<sup>th</sup> Analysis Workshop

*March 29-31, 2011, Bonn, Germany*

The scope of the 20<sup>th</sup> Meeting of EVGA covers all aspects of geodetic and astrometric VLBI including hardware, correlation, analysis and results both scientifically and technologically while the 12<sup>th</sup> IVS Analysis Workshop is devoted purely to discussions of the operational aspects of data analysis in the framework of IVS.

URL: <http://www.mpifr-bonn.mpg.de/div/meetings/20thEVGA/index.html>

### ESA 4<sup>th</sup> GOCE User Workshop

March 31- April 1, 2011, TUM Munich, Germany

The European Space Agency (ESA) is organising the 4th in a series of International GOCE User Workshops from 31 March to 1 April 2011 at the Technische Universität München (TUM), Germany. It is intended to provide potential users of GOCE data products with the opportunity to obtain the latest information on satellite performance as well as details regarding ground segment operations, data products and user services. It will allow users to learn about product content and quality and the outcome of the data calibration and validation. This Workshop is seeking the presentation of new results based on GOCE data in all application areas. Two months prior to the Workshop, the European Space Agency will release the second generation gravity field solutions based on GOCE data.

URL: <http://www.goce2011.org/>

### EGU General Assembly 2011

April 3-8, 2011, Vienna, Austria

URL: <http://meetings.copernicus.org/>

### JURSE 2011 - Joint Urban Remote Sensing Event (URBAN 2011 + URS 2011)

April 11-13, 2011, Munich, Germany

Contact: [jurse2011@bv.tum.de](mailto:jurse2011@bv.tum.de)

### Third Conference on Earth Observation for Global Changes (EOGC2011)

April 13-15, 2011, Munich, Germany

URL: <http://www.pf.bv.tum.de/eogc2011/>

### SPACOMM 2011

April 17-22, 2011, Budapest, Hungary

The Third International Conference on Advances in Satellite and Space Communications

URL: <http://www.iaia.org/conferences2011/SPACOMM11.html>

### GeoInformation for Disaster Management (Gi4DM)

May 3-8, 2011, Antalya, Turkey

URL: <http://www.gi4dm2011.org/>

### Global Space and Satellite Forum (GSSF)

May 9-11, 2011, ADNEC Abu Dhabi, UAE

URL: <http://www.gssforum.com/>

### FIG Working Week 2011

May 18-22, 2011, Marrakech, Morocco

URL: <http://www.fig.net/fig2011/>

### 7<sup>th</sup> International Symposium on Mobile Mapping Technology

June 13-16, 2011, Krakow, Poland

The Symposium MMT' 2011 will be held on 13 – 16 June 2011, in the Sheraton hotel Cracow, Poland. We strongly invite and encourage all professionals, researchers and academics, business and industry partners, students to participate in this important event. Science Chair: Dorota Grejner-Brzezinska.

The MMT2011 web site is up and running: <http://www.mmtcracow2011.pl/>.

### TransNav 2011

June 15-17, 2011, Gdynia, Poland

URL: <http://transnav.am.gdynia.pl/>

### SGEM 2011

June 19-25, 2011, Albena, Bulgaria

The 11<sup>th</sup> International Multidisciplinary Scientific Geo-Conference and Expo - SGEM 2011 (Surveying Geology & mining Ecology Management) will be held during the period 19 - 25 June 2011 at Albena sea-side and spa

resort, Bulgaria. The SGEM GeoConference focuses on the latest findings and technologies in surveying geology and mining, ecology, and management, in order to contribute to the sustainable use of natural resources.

URL: <http://www.sgem.org/>

#### XXX URSI General Assembly and Scientific Symposium

August 13-20, 2011, Istanbul, Turkey

URL: <http://www.ursigass2011.org/>

#### ISDE7

August 23-25, 2011, Perth, Australia

The 7th International Symposium on Digital Earth (ISDE7) with the theme of the Knowledge Generation will be held in Perth, Australia from 23-25, August 2011 in conjunction with the Western Australian Land Information System (WALIS) Forum and the State Natural Resources Management (NRM) Conference.

URL: <http://www.isde7.net/>

#### Journées 'Systèmes de référence spatio-temporels' 2011

September 19-21, 2011, Vienna, Austria

URL: <http://info.tuwien.ac.at/hg/meetings/journees11/index.html>

#### Intergeo 2011

September 27-29, 2011, Nürnberg, Germany

URL: <http://www.intergeo.de/>

#### ISPRS - PIA11 Photogrammetric Images Analysis

October 5-7, 2011, Munich, Germany

URL: <http://www.pia11.tum.de/>

#### UGI 2011 Regional Geographic Conference

November 14-18, 2011, Santiago, Chile

URL: <http://www.ugi2011.cl/>

#### AGU Fall Meeting

December 5-9, 2011, San Francisco, USA

URL: <http://www.agu.org/meetings/>

## Obituary

### Arne E. Bjerhammar (1917-2011)



On the 6th of February, at the age of 93, Arne E. Bjerhammar passed away, less than one year after his wife Carin.

He was born in 1917 at Båstad, southern Sweden, and after completing high school he became a student at the Royal Institute of Technology (KTH) in Stockholm, where he achieved a M.Sc. degree in Surveying in 1942 and the doctor's grade in Geodesy in 1948. He was soon appointed Docent/Associate professor of Geodesy, and, in 1952, Professor of Geodesy at KTH, a chair he was to hold until he retired in 1983.

As a professor he soon became popular among students for his relaxed style and humour. Later, in the 1970-ties usually two weeks a year were spent abroad (in Finland, Italy, Iceland, Spain and Greece) with a group of students, mainly for practical teaching of planning and measuring of geodetic networks.

However, the project in Finland in 1970 was also a research project on the precise Niinisalo baseline to gathering EDM and meteorological data for estimating the velocity of light. Furthermore, in 1973, at the historical

Thingvellir with surroundings in Iceland, a project for repeated observations, aiming at estimating crustal/plate motion, was started up.

His research covered many fields of geodesy. As a result of his doctor's dissertation "A contribution to the methods of optical distance measuring, specially with regard to the problems of automatic plotting" and for his refinement of the modulation system of the Swedish EDM instrument Geodimeter he became one in the record of Swedish inventors. However, many geodesists (and mathematicians) know him for the first time for his new matrix algebra with generalized matrix inverses, published in 1955 (in Swedish) and 1957 (in English). Seven years later, fascinated by M.S. Molodensky's new approach to solve the basic problems of physical geodesy, he presented his original idea of analytical downward continuation of the gravity anomaly to an internal sphere ("the Bjerhammar sphere"), a method that was first met with scepticism by the geodetic community. However, supports were to come, and Bjerhammar was particularly proud and happy to say that, after a long discussion at the IUGG meeting in Berkeley in 1963, Helmut Moritz was convinced and appreciated his method. In 1969 Torben Krarup wrote in his well-known contribution to the foundations of physical geodesy: "As far as I can see, the most important point of view introduced in physical geodesy since the appearance of Molodenskiy's famous articles is Bjerhammar's idea of calculating an approximation of the potential by collocation, at the points where gravity anomalies have been measured, of potentials that are regular down to a certain sphere situated inside the surface of the earth." Among other areas of interest are his original proposals of recovering the Earth's gravity field by using the energy integral for satellites (1967) and by the theory of general relativity using atomic clocks (1975 and 1985) as well as his studies on the correlation between the gravity field and the Fennoscandian land uplift phenomenon in the 1970-ties. He is the author of about 200 scientific articles, including 2 textbooks, many of the articles published as internal KTH reports. He chaired the IAG study group on Statistical Methods in Geodesy (1963-1967).

His sabbatical leaves can be summarized as the stays as a Visiting Scientist at The Research Institute for Geodetic Sciences in Alexandria, USA, in 1967-1968, at Stuttgart University (as an A-v-Humbold scholar) in 1982, National Geodetic Survey in Washington, D.C., in 1984 and at Ohio State University in 1985-1986.

His research was followed by national and international recognition, confirmed by several prizes and rewards such as the German Gauss medal (1969), The Great Prize of KTH (1982), IAG's Levallois medal (1987) and the Rossby Prize of the Swedish Geophysical Society (1988). He has also been awarded "Nordstjärneorden" by his Majesty the King of Sweden. In 1988 he became an honorary doctor of the Technical University of Graz.

Scientific discussions with Arne Bjerhammar were always engaging, intensive, inspiring and inventive; nobody was left unmoved. His demise in 2011 appeared 100 years after the first professor of Geodesy was installed at KTH. By this sad event the last of "the three Swedish kings of geodesy" (Asplund, Tengström and Bjerhammar) is no longer with us.

LARS E. SJÖBERG