

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS UNION GEODESIQUE ET GEOPHYSIQUE INTERNATIONALE

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This monthly newsletter is intended to keep IUGG Members and individual scientists informed about the activities of the Union, its Associations and interdisciplinary bodies, and the actions of the IUGG Secretariat, Bureau, and Executive Committee. Past issues are posted here. E-Journals may be forwarded to those who will benefit from the information. Your comments are welcome.

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1. IUGG – The People at the Forefront (XXXIX): Andrew Yau, President of the International Association of Geomagnetism and Aeronomy (IAGA), 2023-2027



I was born in Hong Kong, China. My experience growing up during the Vietnam War in a working-class neighbourhood near the city harbour (that was frequented by off-duty American sailors) had a profound influence on my subsequent career choices.

The Reward of International Collaboration in Space Research: Andrew Yau (first left) and other foreign participants in front of the M-V launch vehicle carrying the Japanese Nozomi satellite to Mars, Kagoshima, Japan, 1998 After high school and a year in the workplace, I went to Canada to pursue my university study, and obtained my doctorate in Physics from York University in Toronto in 1978. I have been active in space research since then, in a variety of activities, roles, and capacities, including my current roles as IAGA President, Editor for *Geophysical Research Letters*, Professor at University of Calgary, and Principal Investigator for the Canadian CASSIOPE/e-POP (Enhanced Polar Outflow Probe) satellite mission.

My first space research experience was analysing (actually, learning to analyse) satellite data from the NASA Atmospheric Explorer-C mission, as an undergraduate summer student at Harvard-Smithsonian Observatory in Cambridge, MA. This experience served to "whet my appetite" for space research, and it acted as a springboard for my eventual space research career.

My PhD thesis did *not* involve space; it was on fundamental atomic and molecular processes. Neither did my original postdoctoral research goal, which was to pursue molecular dynamics and laser spectroscopy. Indeed, I applied to the Herzberg Institute of Astrophysics (HIA) in Ottawa, for the opportunity to work in the Spectroscopy Group led by the late Nobel Laureate, Dr. Gerhard Herzberg. Much to my surprise, I was offered a position in the Space Physics Group instead - hence the second chapter of my space research career.

It was the early days of active experiments in space and spaceborne ion mass spectrometry, and so my initial research effort was aimed at the plasma dynamics of the aurora, with a focus on ion composition measurement techniques and active experiments on sounding rockets. The research led to several exciting discoveries and findings, including the acceleration of ionospheric ions in the topside auroral ionosphere to above their escape energies and their eventual outflow as an important source of heavy-ion plasma in the magnetosphere, and the intricate electrodynamic coupling between the Earth's magnetosphere and its auroral ionosphere-thermosphere.

Unfortunately, our research effort came to a screeching halt just as we felt we were hitting our stride, when the Government decided to terminate the sounding rocket program. The cancellation turned out to be a blessing in disguise as it prompted me to pivot our research towards satellite observations, and active participation in satellite missions in collaboration with international colleagues.

Such collaborations began with my participation in the NASA Dynamic Explorer mission as Co-Investigator (Co-I), and they included the Japanese Akebono mission and the Nozomi mission to Mars, the Swedish-German Freja mission, and the ESA Swarm mission, in addition to several international sounding rocket missions, as Co-I and Instrument PI.

The scientific results from these collaborations laid the scientific foundations for e-POP, a low-Earth orbit (LEO) mission in polar orbit focused on the microphysics of space weather processes in the topside ionosphere, by using multiple low-cost, innovative instruments and making measurements at the highest possible resolution. Led by Canada, e-POP included two instruments provided by our Japanese and US colleagues.

After the move of our group from HIA to University of Calgary, I was appointed Senior NSERC Industrial Research Chair (IRC) in Space Science and led the development of e-POP as Mission PI starting in 2003. Originally conceived and funded as a two-year mission, e-POP was launched in September 2013 and has been in continuing science operation since, celebrating its Ten-Year Anniversary in space in September 2023. The operation was revised and reduced in duty cycle in December 2021 to support a new set of science investigations with the spacecraft in a Sun-pointing configuration, in response to a partial failure of the reaction wheel system onboard.

The research activities discussed above exemplify the critical role of international collaborations in geophysics and space research. This underscores the importance of IUGG and its scientific Associations and their mandate to promote and coordinate international collaborations through scientific assemblies and meetings and other multilateral collaborative initiatives.

I remember vividly the first IUGG Assembly that I attended, in Vancouver in 1987 as an Early Career Scientist (ECS). The opportunity to network with other scientists from around the world, not only in my own field of research but also in other geoscience disciplines, is what made the Vancouver Assembly (and each of the subsequent Assemblies that I attended) special.

Looking back, my academic and research career has been one of serendipity shaped and helped by a few extraordinary people. In high school, I benefitted greatly from the guidance of my high school math teacher Mr. Chou, including his "divide and conquest" approach to difficult math (and real-life) problems and his belief in our ability as "first-generation" high-school students in our families to succeed in secondary and post-secondary education despite our financial odds. As a graduate student and an ECS, I benefitted handsomely from the career and scientific advice of several eminent scientists in the field, who would generously share their wisdom and scientific insights in scientific meetings or during their visits of our institute: the late Dr. William (Bill) Bernstein and the late Prof. Bengt Hultqvist, former IAGA Secretary General, are but two notable examples.

I would certainly encourage ECS in the field to take on challenging geophysics problems in their research, to treat failed projects as valuable learning opportunities, and to seek out leading researchers in the field for career or scientific advice as such opportunity arises. These people are understandably very busy, and some of them may be too busy, but all an ECS needs is one or two of them who would spare the time, in which case their advice *could* make an important difference to a career.

2. IUGG – Symposia Support 2024: Call for Proposals (REMINDER)

The program of IUGG support for scientific meetings (e.g., workshops, advanced schools, symposia) is one of the most important means by which the Union and its Associations pursue the goal of promoting geophysics and geodesy through international collaboration. A portion of the IUGG's budget is devoted to the support of these scientific meetings. The IUGG Executive Committee places great emphasis on maintaining high scientific standards, coverage of a balanced spectrum of topics, and an appropriately broad and international flavour for the scientific programs of the meetings. In that respect, the ISC rules on non-discrimination in the access by qualified scientists from all parts of the world to any IUGG-sponsored meeting apply.

The number of co-sponsored meetings ranges from 10 to 15 (up to USD 10,000 each). Accordingly, not all meeting proposals worthy of support can be awarded IUGG sponsorship.

IUGG funds are provided to support participation of students, early career scientists, female scientists, and especially those from less-affluent countries.

The following guidelines for obtaining IUGG sponsorship should be observed by prospective proposers:

• IUGG-sponsored scientific meetings should have a well-defined and scientifically relevant theme, should be scheduled at a propitious time for significant progress in the field, and should be of interest to early career researchers as well as senior experts.

- While the IUGG embraces all fields in geophysics and geodesy, a proposed program should maintain a balanced scope relevant to IUGG Associations. Each proposal will be judged on its own scientific merits.
- Given the international nature of the Union, meetings are by definition internationally oriented. This requires a well-balanced geographical distribution of attendees as well as meeting venues.
- Financial support from other sources is encouraged, and well regarded.

Normally, the initiative to propose a scientific meeting for IUGG sponsorship originates from a group of scientists in a certain field. Prospective meeting organisers should contact the respective Association Secretary General (ASG) well in advance of their intended proposal submission, by sending a request for IUGG support until **15 October 2024**.

The scientific merit of each scientific meeting's proposal will be evaluated by the respective ASG, taking into consideration comments and advice received from the Association Executive Committee. The ASGs should communicate their recommendation for selection to the IUGG Secretary General before 31 October 2024.

The allocations will be suggested by the IUGG Secretary General and reviewed by the Members of the IUGG Bureau. The Bureau will decide on the final selection of the meetings to be supported. The decision on IUGG support will be communicated to the ASGs by the IUGG Secretary General in a letter of award as soon as possible, but not later than **1 December 2024**. The IUGG support should be acknowledged in all documents and information related to a sponsored meeting (e.g., in the scientific program, on the website, brochures, publications of proceedings etc.).

More information is available <u>here</u>.

3. IUGG BOLIVIA – Report on 'Crustal Deformations below the Central Andes'

On behalf of the IUGG National Committee for Bolivia, I would like to refer you to our study on '<u>Crustal Deformations below the Central Andes</u>'. If you are working in this field or interested in collaboration, please contact me <u>here</u>.



Jose L. Telleria-Geiger, President of the IUGG National Committee for Bolivia

4. IUGG USA – Business visa to visit the Unites States: Share your experience

The U.S. National Academies' Board on International Scientific Organizations (BISO) has launched a project to assess the experiences of our international colleagues in applying for a short-term business visa to visit the United States. As a valued member of the international scientific community, we need your help with this important project.



If you are a scientist, engineer, or me dical professional who does not currently reside in the United States and has applied for or considered applying for a short-term business visa to visit the United States in the past 10 years for a collaboration, convention, conference, or seminar, we invite you to

click the following link (or copy and paste into your browser) to complete a brief online survey about your visa application experience. The survey is anonymous and will take approximately 10 minutes to complete. We have hired a specialist agency, KGL Consulting, to collect data on this issue.

https://www.surveymonkey.com/r/NAS2024

Your responses will help us understand how current visa processes impact international meetings and international collaborations. Your experiences and views are vital for shaping discussions on this issue and achieving positive outcomes for the global scientific community. BISO is a unit of the National Academies, a non-governmental organization with no control over U.S. visa regulations or processes.

Thank you for your participation. If you have questions prior to taking the survey, please reach out to KGL Consulting at annette.hager@kwglobal.com.

Please forward this invitation to any colleagues who may be interested in sharing their thoughts about their visa application experience. The deadline for responses is 12:00 (UTC) on 31 October 2024. Input from the survey will be summarized in a public report to be released in 2025.

Ourania Kosti, BISO Staff Officer, and Mark Cesa, BISO Chair

5. IACS/IAMAS/IAPSO – Early Career Scientists Awards 2025: Call for Nominations

IACS, IAMAS, and IAPSO call for nominations for their Early Career Scientists Awards 2025 and will celebrate the awardees at the the IAMAS/IACS/IAPSO Joint Assembly (<u>BACO 2025</u>) in Busan, Republic of Korea in July 2025.

International Association of Cryospheric Sciences (IACS)

The deadline for submitting nominations for the IACS 2025 Early Career Scientist (ECS) Prize is 13 January 2025.



The award is given for a scientific paper focused on a cryospheric topic represented by any of the current IACS divisions. The nominee must be an early-career scientist defined as a person who is currently enrolled in a PhD/MSc program or whose highest academic degree (PhD, MSc) was obtained no longer than 2 years before the submission deadline.

Guidelines and the nomination form can be found <u>here</u>.

Liss M. Andreassen, IACS President

International Association of Meteorology and Atmospheric Sciences (IAMAS)

The deadline for submitting nominations for the IAMAS Early Career Medal 2025 is **1 March 2025**. Past recipients are listed <u>here</u>.



IAMAS follows the IUGG definition of Early Career Scientist (ECS): An ECS is a student, a PhD candidate, or a practicing scientist who received their highest academic degree within the past 10 years. This period can be extended because of career interruptions. For the purposes of this award the past 10 years began 1 July 2015.

Summary of nomination requirements:

- A nomination letter (not to exceed 2 pages)
- 2 additional letters of support
- The nominee's CV (should not exceed 3 pages) with an emphasis on their scientific work in a research field of IAMAS, their contribution to international scientific cooperation, and their service contributions
- A list of their most important published scientific works (not to exceed 2 pages)

The award is open to anyone, but nominations may only be submitted through the IAMAS Commission Presidents and the Members at Large. Each Commission or Member at Large is limited to 1 nomination. The list of Commission presidents and Members at Large is available here.

We ask that all nominations for the IAMAS medal be e-mailed to the <u>IAMAS Secretary General</u>. The IAMAS Bureau will then select the medal winner.

Andrea Flossmann, IAMAS President

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

The deadline for submitting nominations for the IAPSO Early Career Scientist Medals 2025 is **10 January 2025**.



This award honours Early Career Scientists for their outstanding research in the physical sciences of the oceans, and for their cooperation in international research. The IAPSO Early Career Scientist Medals, one for Physical Oceanography and one for Chemical Oceanography, will be presented at <u>BACO</u>

<u>2025</u>, where the awardees will be expected to give a talk on a scientific topic of their choice. Financial assistance to attend the assembly will be available.

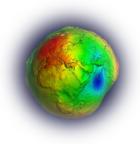
Please find the procedure and requirements for nomination here.

The nomination package should be submitted to the <u>IAPSO Secretary General</u>.

Hans van Haren, IAPSO President

6. IAG – International Centre for Global Earth Models (ICGEM) service and its promising future to serve the Earth Science community

<u>ICGEM</u> is one of the five services coordinated by the International Gravity Field Service (IGFS) of the IAG. It collects and archives all of the existing global gravity field models (GGMs), provides a web interface for getting access to GGMs and visualising them; as well as a calculation service for the computation of different gravity field functionals that are used in geodesy, geophysics, hydrology, oceanography, glaciology and other Earth science disciplines.



ICGEM logo - 3 D visualisation of the geoid undulation derived from a recent global gravity field model. The geoidal surface (Earth's mean sea level) serves as a vertical reference surface for heights

ICGEM secured 3 years funding from the German Research Foundation (DFG) to continue and expand the range of its activities by offering GGMs and related products including data representations and metadata, documentation for both data and methods, modernisation of the database and website and finally by offering a sustainable infrastructure for future applications. With the SAMDAT (Service and Archive for Mass Distribution And mass Transport data) project we are looking forward to reaching a greater community and serving the Earth Sciences better.

The ICGEM service has been a demand-driven service since its establishment in 2004 and kindly invites you to visit the <u>current service</u>, its <u>calculation service</u>, and to participate in the <u>user survey</u> where you can give us feedback on the current service and future directions by the end of October 2024.



E. Sinem Ince, on behalf of the ICGEM and SAMDAT project teams

7. IAHS – Science for Solutions Decade 2023-2032 (HELPING): Update



The new scientific decade (2023-2032) of IAHS aims at searching for sustainable solutions to undesired water conditions – whether it be too little, too much or too polluted. Many of the current issues originate from global change, while solutions to problems must embrace local understanding and context. The decade will explore the current water crises by searching for actionable knowledge within three themes: global and local interactions, sustainable solutions and innovative cross-cutting methods. We capitalise on previous IAHS Scientific Decades shaping a trilogy; from Hydrological Predictions (PUB) to Change and Interdisciplinarity (Panta Rhei) to

Solutions (HELPING). The vision is to solve fundamental water-related environmental and societal problems by engaging with other disciplines and local stakeholders. The decade endorses mutual learning and co-creation to progress towards UN sustainable development goals. Hence, HELPING is a vehicle for putting science in action, driven by scientists working on local hydrology in coordination with local, regional, and global processes.

More information about HELPING can be found in the following article: <u>The IAHS Science for Solutions decade</u>, with Hydrology Engaging Local People IN one Global world (HELPING).

Berit Arheimer, IAHS President

8. IAVCEI – Towards inclusive collaboration in volcanology: guidelines for best-engagement protocols in international collaboration

The International Network for Volcanology Collaboration (INVOLC) is a network formalised by IAVCEI with the specific ambition to enhance volcanology globally through improved international collaboration.



IAVCEI-INVOLC was created with a focus on volcano scientists working in resource-constrained contexts, including those based in low- or middle-income countries. After a community-wide online survey and inaugural workshop during which INVOLC's ambitions were discussed, a series of challenges, as commonly experienced by those working in resource-constrained settings, were identified. These challenges may present barriers to participation in volcano science in an international context and are related to both organisational resources (financial, human, technical) and inclusion in research collaborations. In this <u>perspectives paper</u>, we present a series of 15 guidelines for best-engagement protocols in international collaboration in volcanology that may be adopted during times of quiescence, volcanic unrest and/or an eruption and its aftermath. Our aspiration is that these guidelines will help build more respectful, equitable and sustainable partnerships that will ultimately advance the science of volcanology.

9. CMG – IUGG Conference on Mathematical Geophysics in 2026: Call for proposals to host

The IUGG Commission on Mathematical Geophysics (CMG) invites proposals for hosting the Conference on Mathematical Geophysics in 2026. A series of the biennial conferences started in 1986. These interdisciplinary events aim to encourage exchange of ideas and information in all areas of geophysics, with emphasis on the application of mathematics, statistics and computer science to geophysical problems. They promote the development and application of mathematical methods and theoretical techniques for the solution of problems across the various geophysical disciplines as well as problems related to sustainability (e.g., climate, energy, natural hazards and disaster risks, ocean, water). The last five conferences have been held in Mexico (2014), France (2016), Russia (2018), Republic of Korea (2022), and India (2024). The conference typically attracts about 200 delegates for a 5-6 day meeting. IUGG members who may be interested in hosting the conference should contact the CMG Secretary, Andrew Valentine for more details.

Alik Ismail-Zadeh, CMG Chair

10. Earth Telescope Research Program – Call for expressions of interest

The Istituto Nazionale di Geofisica e Vulcanologia (INGV) invites researchers to express their interest in participating and contributing to one of the three research lines under the Earth Telescope (ET) Research Program:

1. Studying the Asthenosphere as a Key to Understand the Dynamics of Plates and the Origin of Magmas (SAKURA): This research line aims to investigate the asthenosphere's role in plate tectonics and magma generation, utilising cutting-edge observational and analytical techniques.

- 2. Study of Geospheres Interactions in the Earth System (TESI): This research line focuses on understanding the interactions between Earth's internal processes and surface dynamics, employing seismological and geophysical analyses, modelling, and laboratory experiments to shed light on the complexities of these interactions.
- 3. Investigating the Interplay Between Volcanic Activity and Climate Change (DEMETRA): This research line seeks to elucidate the relationship between volcanic activity and climate change, examining how volcanic emissions influence climate systems and contribute to global warming or cooling.

This interdisciplinary initiative aims to address fundamental questions about the dynamics of planet Earth by improving our ability to scrutinise its interior, from the deep Earth to the ionosphere. More information can be found here.

Ciro Del Negro, on behalf of the Earth Telescope Scientific Committee

11. Awards and Honours

American Geophysical Union (AGU)

AGU announced its **2024 Union Medallists, Awardees, Prize Recipients and Fellows** for their excellence in scientific research, education, communication, and outreach, as well as its **Section Awardees and Named Lecturers** who will be honoured for their sustained and unique contributions to advancing our understanding of Earth, its atmosphere and oceans, and planets and astral bodies beyond our own. The awardees will receive their honours at the 2024 AGU Fall Meeting. Among the 2024 Union Awardees, Fellows, Section Awardees, and Named Lecturers are the following scientists who have been active in IUGG:

Union Medallists:

Srinivas V. Bettadpur (USA), President of the IAG Commission 2: Gravity Field (since 2023) was awarded the Charles A. Whitten Medal; and

Lisa Tauxe (USA), IAGA National Correspondent (2017-2023) was awarded the John Adam Fleming Medal;

Union Fellows:

Eric Donovan (Canada), IUGG Liaison Officer to COSPAR (2012-2015);

David W. S. Eaton (Canada), IASPEI National Correspondent (2011-2017);

Mioara Mandea (France), IUGG President-Elect (2023-2027);

Mathieu Morlighem (USA), IACS President-Elect (2023-2025);

Gabriel Andres Vecchi (USA), IAMAS National Correspondent (2017-2023); and

Dawen Yang (China), Secretary of the IAHS International Commission on Coupled Land-Atmosphere Systems (ICCLAS, 2012-2015).

Section Awards and Lectures:

Ian H. Campbell (Australia), Co-Leader of the IAVCEI Commission on Large Igneous Provinces (2004-2013) was awarded the Norman L. Bowen Award and named the Norman L. Bowen Lecturer;

Christopher J. Davies (UK), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2021) was awarded the William Gilbert Award;

Edward Garnero (USA), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2016) was named the Beno Gutenberg Lecturer;

Thomas Herring (USA), Service Representative, IAG Executive Committee (since 2012) was awarded the Ivan I. Mueller Award for Distinguished Service and Leadership;

Claire J. Horwell (UK), Leader, IAVCEI International Volcanic Health Hazard Network (IVHHN, since 2018) was awarded the GeoHealth Section Award;

Yongxin Pan (China), Executive Committee Member, Union Commission on the Study of the Earth's Deep Interior (SEDI, since 2016) was named the Edward Bullard Lecturer;

Simon Michael Papalexiou (Canada), Vice-President, IAHS International Commission on Statistical Hydrology (ICSH; 2012-2015 and since 2023) was awarded the Natural Hazards Early Career Award; and

Soroosh Sorooshian (USA), IUGG Fellow (2019) was named the Walter Langbein Lecturer.

International Association of Hydrological Sciences (IAHS)

The winner of the 2024 Tison Award is *Martin Addi* (Ghana). Martin received this award for his Hydrological Sciences Journal paper: <u>Evaluation of imputation techniques for infilling missing daily rainfall records on river basins in Ghana</u>.

The award will be presented during the 2025 IAHS Scientific Assembly in Roorkee, India in October 2025.

The IAHS Tison Award, established in 1982, aims to promote excellence in research by young hydrologists. The Award is granted for an outstanding paper published by IAHS in a period of two years previous to the deadline for nominations. This award is prestigious with a USD 1,000 prize and a 1 year subscription to HSJ co-sponsored by IAHS and Taylor & Francis, the publisher of Hydrological Sciences Journal.

Congratulations!

12. Obituary

With great sadness IUGG reports the death of

Hans-Ulrich Schmincke (1937-2024), IAVCEI Secretary General (1983-1991).

13. Meeting Calendar

This calendar includes meetings which are planned to be organised under the umbrella of IUGG, and major conferences of IUGG's partner organisations (in *italics*). The calendar is updated regularly and is also available <u>online</u>. If you would like to add a meeting, or report changes, please contact the IUGG Secretariat.

October

- October, IAMAS, Qingdao, China, ICCL Conference
- 1-4, IAGA, Nagoya, Japan, <u>Joint Space Climate 9 Symposium and ISEE Symposium</u>
- 5-13, IAVCEI, Nicolosi, Italy, 9th School on Convective and Volcanic Clouds (CVC)

- Detecting, Monitoring and Modelling
- 6-9, EMSEV, IAGA, IASPEI, IAVCEI, Chania, Greece, <u>Electromagnetic Studies of</u> Earthquakes and Volcanoes
- 7-9, IAG, IAGA, IUGG, GFZ, Potsdam, Germany, <u>GGOS Topical Meeting on the Atmosphere</u>
- 8-10, GFZ, Potsdam, Germany, GRACE/GRACE-FO Science Team Meeting 2024
- 10-11, IAG, Potsdam, Germany, GGOS Days 2024
- 13-17, IASPEI, UNESCO-IOC, Bodrum, Turkey, 3rd World Conference on Meteotsunamis
- 14-18, IAMAS, Nanjing, China, ICDM Workshop 2024
- 16-18, SCOR, Qingdao, China, 2024 SCOR Annual Meeting
- 20-26, IAG, Kunming, China, 23rd International Workshop on Laser Ranging
- 30-1 November, IAHS, Maseru, Lesotho, 25th WaterNet Symposium
- 31-6 November, IAGA, Vassouras, Brazil, XXth IAGA Workshop on Geomagnetic Observatory Instruments, Data Acquisition and Processing

November

- 3-7, IUGG, IASPEI, Belek, Türkiye, <u>15th General Assembly of the Asian Seismological</u> Commission
- 4-7, IUGG, IAHS, Florianópolis, Brazil, 9th International Water Resources Management
 Conference of the International Association of Hydrological Sciences; 14th International
 Workshop on Statistical Hydrology of the International Association of Hydrological
 Sciences; and 1st Encontro Brasileiro de Hidrologia Estatística
- 4-8, GRC, Suva, Fiji, GeTEWS Oceania 2024
- 4-8, IAVCEI, San Pedro de Atacama, Chile, 1st International Monogenetic Conference
- 6-8, IAG, Manila, Philippines, <u>IAG Workshop on Asia Pacific Gravity, Geoid, and Vertical</u> Datums
- 10-14, IAMAS, Goa, India, 9th SOLAS Open Science Conference
- 11-14, UNESCO-IOC, IUGG, Banda Aceh, Indonesia, <u>2nd UNESCO IOC Global Tsunami Symposium</u>
- 18-21, IAG, Bogota, Colombia, SIRGAS 2024

December

- 9-13, AGU, Washington DC, USA, AGU Fall Meeting 2024

Association Scientific Assemblies 2025

- 29 June 4 July, IAVCEI, Geneva, Switzerland, IAVCEI Scientific Assembly 2025
- 20-25 July, IACS, IAMAS, IAPSO, Busan, Rep. of Korea, <u>IACS-IAMAS-IAPSO Joint</u> Scientific Assembly 2025
- 31 August 6 September, IAGA, IASPEI, Lisbon, Portugal, <u>IAGA-IASPEI Joint Scientific</u> <u>Assembly 2025</u>
- 1-5 September, IAG, Rimini, Italy, <u>IAG Scientific Assembly 2025</u>
- 5-10 October, IAHS, Roorkee, India, IAHS Scientific Assembly 2025

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