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# IAMAS Newsletter



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## President's Message

Dear IAMAS colleagues:

I am happy to address you all on the occasion of this 12th issue of the IAMAS newsletter. I would like to first introduce myself. I am a European scientist who specialises in planetology, born in Athens, Greece but working in Paris, France for the past 30 years and currently Director of Research at the French National Center for Scientific Research (CNRS). My institute is the Laboratoire d'Etudes Spatiales et d'Instrumentation en Astrophysique (LESIA) of Paris Observatory.

After having served as President of the International Commission for Planetary Atmospheres and Evolution (ICPAE) for two 4-year terms I was recently (in July 2011, at the Melbourne IUGG/IAMAS Assembly) elected IAMAS President.

In my capacity as a planetologist, I will try to associate the exploration of the other planets with Earth sciences and augment our IAMAS community accordingly, promoting collaborations and mingling of the different societies and by encouraging symposia at each Assembly, related to all of the main themes of the IAMAS (meteorology, atmospheric science and related fields), which, I believe quite reflect also in the planetary sciences main concerns. For instance, I work on the physical processes occurring on Titan, Saturn's main satellite, and a sort of cold sibling to the Earth, and in that case, I also investigate processes close to our own planet's preoccupations: atmospheric composition and dynamics, circulation, meteorology and

climatology. I therefore believe that there is a strong connection between planetary atmospheric physics and terrestrial, and that there is a great potential benefit in mixing the communities.

In my current positions as President of the Planetary and Solar System Sciences of the European Geophysical Society (EGU), General Secretary of the Division of Planetary Sciences (DPS) of the American Astronomical Society and closely involved to the organization of the science program of Asian Oceanian Geophysical Society (AOGS), COSPAR and other such major societies, I believe that I have some understanding of the organisation of scientific meetings within a large international collaboration. Furthermore, in my capacity as Chair of the Solar System and Exploration Working Group and member of the Space Science Advisory Committee of the European Space Agency, I have also been in contact with Earth Sciences from space findings and am well aware of International scientific and engineering collaborations and the resulting benefits.

In light of the above, I would like to say that I very much hope to be a worthy successor to my excellent predecessors and with the help of the Bureau serve the purpose of our association to the best of my capabilities.



Athena Coustenis, President, IAMAS.

## Impressions from Melbourne

As a newly elected IAMAS Vice President, I wanted to share my experiences at the IUGG2011 meeting in Melbourne last June. The Scientific Assembly ran from June 28th through July 7th. It was also nice to have sessions that ran for a full day and even several days. This allows the program to be set up to cover a full range of topics within a general area. Thanks very much to our Commissions for organising a great set of sessions! The two-week format is a bit long, for me personally, but with the long trip to Melbourne, a longer stay was appreciated and it also allowed some people to escape the meeting and see the sites in and around Melbourne. I also really enjoyed some of the Plenary talks, which allowed me to get outside my own area of personal interest and learn of some exciting science being done in other related fields. Climate science is so general and interdisciplinary, we can learn much from these other fields.

IAMAS organised or co-organised several of the dozen Union symposia that were planned as well as participating in 13 of the joint association symposia and 14 IAMAS-only symposia for the roughly 3400 participants in the overall meeting. Among all the associations, IAMAS had the highest number of delegates, with just over 600. Topics of the symposia ranged from consideration of the paleoclimatic context for current climate change to projections for the future, from polar regions to the upper atmosphere, and from weather extremes to planetary atmospheres, so



**Sample of participants (21 of 35) of IAMAS General Assembly on 4 July 2011: From left, standing: Neil Holbrook (AU), Zen Kawazaki (JP), Tomas Halenka (CZ), Robert Vincent (AU), Markus Furger (CH), Guoxiong Wu (CN), Aksel Hansen (DK), John Turner (UK), Michael MacCracken (US), Zev Levin (IL), Mladjen Curic (RS), Hugo Berbery (US), Paul Newman (US), Daren Lu (CN); kneeling: Daniel Marsh (US), Werner Schmutz (CH), Zheng [Jenny] Lin (CN), Hans Volkert (DE), Jianping Li (CN), Shigeo Yoden (JP), James Renwick (NZ)**

a very broad scope was covered. I personally attended the IAMAS sessions covering aerosol-cloud-precipitation-radiation interactions, as well as the chemistry-climate interactions and the session on ice in the atmosphere. The presentations from “seasoned” scientists were, of course, of interest, but I also found many presentations from new emerging scientists that were of great interest. We established a “young scientist” award for the future that will encourage even more participation at this level.

An interesting factoid from the meeting was that the US and European satellite and scientific communities have now agreed that the irradiance of the quiet Sun is  $1360.8 \text{ W/m}^2$ , which is a few  $\text{W/m}^2$  less than has been traditionally used for some decades. Another highlight was an IUGG resolution recommending the use of the new equation of state for ocean water that resulted from the SCOR WG on that topic.

In addition to electing officers, IAMAS approved revising its statutes and by-laws. One of the provisions in the revised statutes, mirroring a change approved in the IUGG statutes, is to establish an Affiliated Member category to which international research and professional entities (including groups such as SCOR) are invited to apply. There is neither cost nor official responsibility involved, but instead the opportunity for joint planning of activities and carrying out of mutual objectives (e.g., capacity building, out-reach and education, etc.).

A potentially important IAMAS initiative that gained acceptance by other associations at the IUGG General Assembly is the formation of what seems likely to be named the Union Commission on Climatic and Environmental Change (UCCEC). The notion is that UCCEC will both work to build links across the associations within IUGG and also be the IUGG link to the emerging set of research activities being developed by ICSU in cooperation with the national research program managers that are part of the Belmont process and International Group of Funding Agencies, now coming together as “The Alliance.” How this will all actually work out is still under discussion as new IUGG and association officers assume their roles.

Joyce Penner, Vice-President, IAMAS

### Meeting support for 2012

The IUGG secretariat will contribute in 2012 to all four IAMAS meetings, for which support was requested. In total, 8500 USD were granted, especially to assist the attendance of early-career scientists (cf. p. 6).

IAMAS also held its General Assembly in Melbourne, with the highlight being the election of new officers to join the continuing ones, such that the new Bureau of IAMAS is (asterisk indicates a new officer):

**President:**

Dr. Athéna Coustenis\* of France (planetary atmospheres), to serve 2011-15. Dr. Coustenis was also selected by IUGG to be the IAMAS liaison to SCOR (as an aside, her interests include not only planetary atmospheres, but also planetary oceans, which appear to exist below the surface on Titan, for example).

**Past President:**

Dr. Guoxiong Wu of China (weather and climate dynamics), to serve 2011-15.

**Vice-Presidents:**

Prof. Joyce Penner\* of the USA (atmospheric chemis-

try), to serve 2011-15.

Dr. John Turner\* of the UK (polar meteorology), to serve 2011-15. Dr. Turner is also the liaison to SCAR.

**Members-At-Large:**

Prof. Ernesto Hugo Berbery of Argentina/USA (dynamic meteorology and monsoons), to complete term, 2007-15.

Dr. Vladimir Kattsov of Russia (polar meteorology and climate), to complete term, 2007-15.

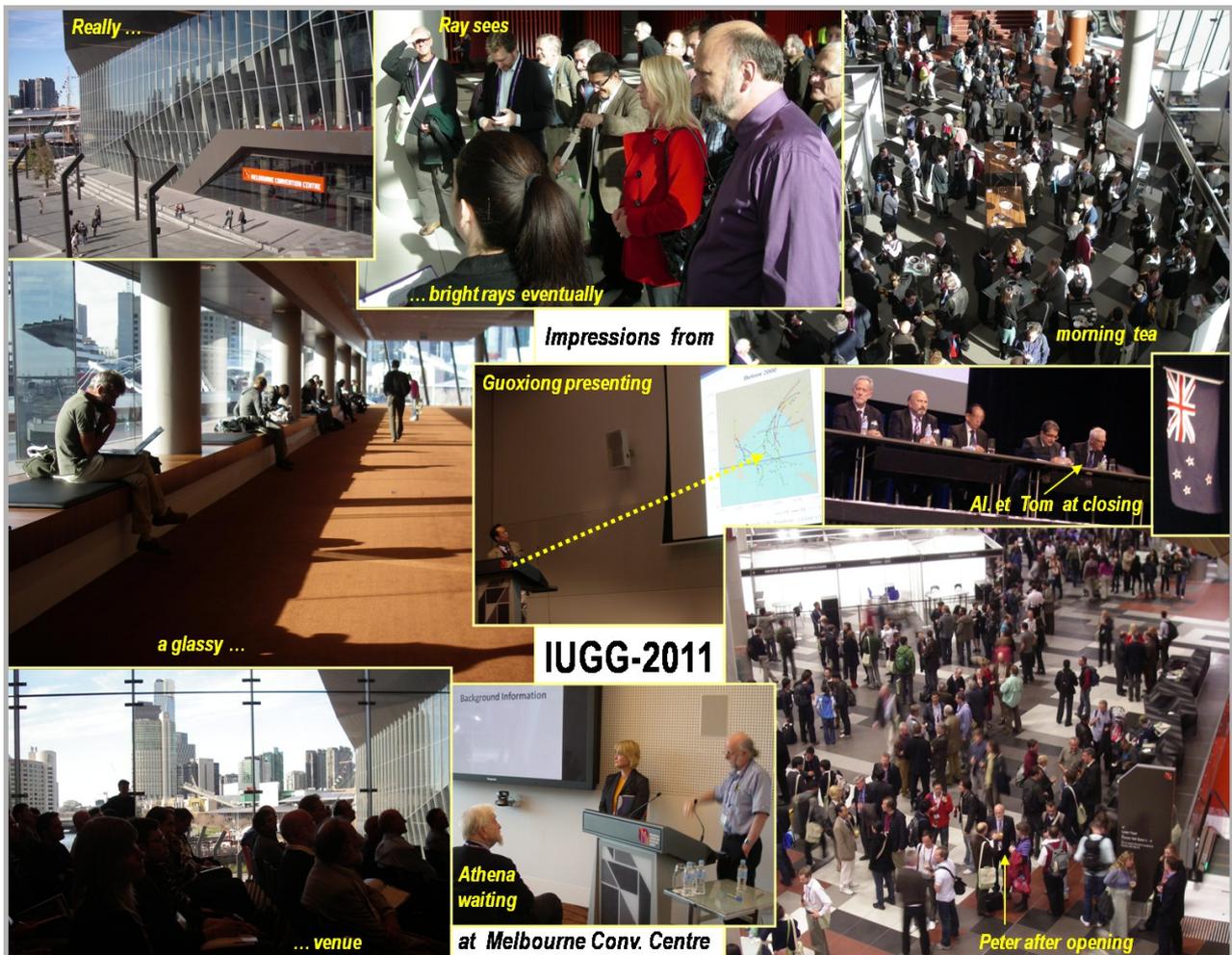
Prof. Daren Lu\* of China (radiation and the middle atmosphere), to serve 2011-2019.

Prof. Colin Price\* of Israel (atmospheric electricity), to serve 2011-2019

Prof. Tetsuzo Yasunari of Japan (dynamic meteorology and climate), to complete term, 2007-15.

**Secretary-General:**

Dr. Hans Volkert, Germany (mesoscale and mountain meteorology); completing his 8-year term (2007-15).



**Communication at IUGG-2011: Ray Cas, Tom Beer and Peter Manins of the Local Organising Committee (LOC), Guoxiong Wu and Athena Coustenis of IAMAS, and many other delegates.**

## Introduction/Purpose of the Commission

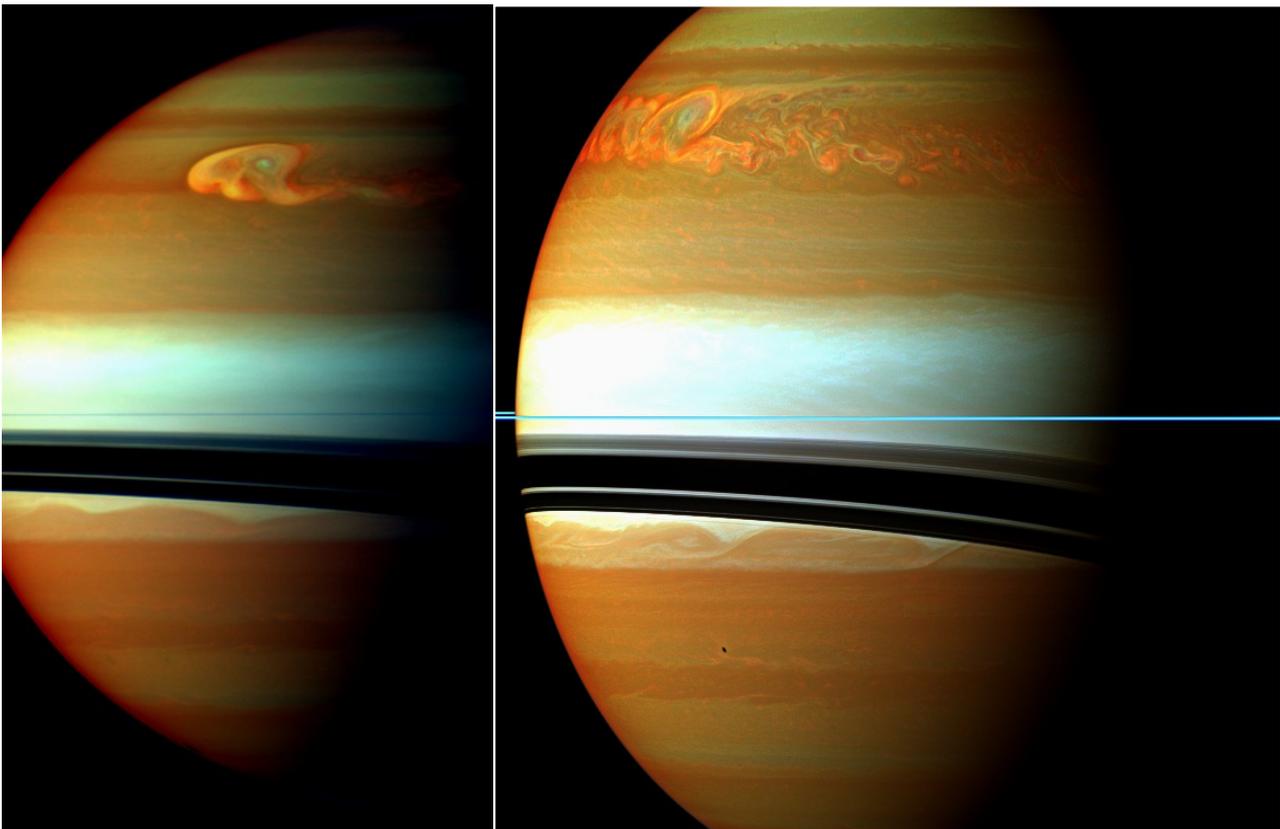
The International Commission on Planetary Atmospheres and their Environments and Evolution (ICPAE) is one of the ten commissions of the International Association of Meteorology and Atmospheric Sciences (IAMAS), which is in turn part of the International Union of Geodesy and Geophysics (IUGG). ICPAE focuses its activity on the study of environmental conditions in the gaseous envelopes of planetary objects and their evolution. Its scope includes also tenuous planetary atmospheres (exospheres) and cometary comas.

The ICPAE primary functions are: (1) to promote scientific work in the field of planetology in general and atmospheric sciences in particular by maintaining liaison among active research workers; (2) to organize symposia on the ICPAE subjects at the biannual meetings of IAMAS; (3) to co-ordinate contacts and research exchange among related associations such as the Division

for Planetary Sciences (DPS of AAS), the European Geophysical Union (EGU), the Asia and Oceania Geophysical Society (AOGS), the American Geophysical Union (AGU) and the European Planetary Science Congresses (EPSC), and to co-sponsor meetings and workshops during the Assemblies.

## New Bureau elected

The ICPAE consists of scientists actively working in the field of planetary atmospheres. It currently includes 47 regular members, as well as 7 honorary permanent members including the previous President, Vice-President, and Secretary (A. Coustenis, D. Titov, D. Strobel respectively). A new ICPAE bureau was elected at the 2011 business meeting, electing Sanjay Limaye (**President**, University of Wisconsin-Madison); Leigh Fletcher (**Vice President**, University of Oxford) and Mathieu Hirtzig (**Secretary**, Observatoire de Paris-Meudon). The new bureau would like to express



*In 2010 a huge storm was observed on Saturn by NASA's Cassini spacecraft. The storm extended approximately 9,000 miles (15,000 kilometers) in latitude, which makes it the largest observed on Saturn for two decades. The false-colour mosaic image on the left shows the storm head early in its development. The head of the storm being engulfed by its own tail is shown on the right-hand image. It was a convective thunderstorm, which generated turbulence that lingered long after its active phase. Images courtesy of NASA: <http://saturn.jpl.nasa.gov/news/cassini/features/feature20111117/>.*

the huge gratitude of the ICPAE to the retiring President, Vice President and Secretary for their years of service to the community. Finally, a new website for the ICPAE has been launched to keep members up to date with important meetings and events within the community: <http://www.atm.ox.ac.uk/icpae/>

### Activities during 2011

The activities of ICPAE members continue to benefit from the stream of data arriving from planetary spacecraft, orbital telescopes and ground-based datasets. Significant progress continues to be made in our study of the myriad of physical and chemical processes at work within planetary atmospheres, revealing the mechanisms responsible for the formation and evolution of planetary environments in our solar system and beyond. ICPAE members continue to publish scientific results from a range of successful space missions, including (but not limited to) Cassini-Huygens, Mars Express, Venus Express and Mars Reconnaissance Orbiter. The Herschel Space Telescope has provided a wealth of new sub-millimetre spectroscopy to study the importance of water in the formation and evolution of our solar system. The Kepler and Corot missions continue to discover an expanding number of planets around other stars, ranging from hot Jupiters to super Earths, and we expect the characterisation of the atmospheres of exoplanets to feature highly in the work of the ICPAE in the coming decade.

The major event this year has been the IUGG 2011 Symposia in Melbourne, Australia. Two sessions were co-sponsored by ICPAE, namely J-M07 "Atmospheres and ices on terrestrial planets" and M05 "Comparative atmospheres of the giant planets and their satellites", in addition to the ICPAE business meeting. These sessions presented some of the latest exciting advances in planetary atmospheric science, including new observations and dynamical studies of giant planet atmospheres; Cassini results for Saturn's satellites; new results for the circulation and chemistry within Venus' atmosphere; Titan's methane cycle, clouds and climate; and Mars' history, its atmospheric methane and potential habitability. The ICPAE sessions aimed to highlight comparative studies of the planets in our solar system. ICPAE speakers from every continent were represented in Melbourne.

The ICPAE, through its President and other members, have sponsored other meetings to promote Planetary Atmospheres and their Environments. In addition to the IUGG 2011, ICPAE members helped to organize events at a number of major conferences, including:

- EGU 2011 (Vienna, Austria, 3-8 April)
- AOGS 2011 (Taipei, Taiwan, 8-12 August)
- EPSC-DPS Joint Meeting 2011 (Nantes, France, 2-7 October)
- AGU 2011 (San Francisco, 5-9 December)

### Future Plans

The ICPAE Bureau hopes to continue the theme of comparative planetology with the forthcoming symposium in Boulder, Colorado focusing on the "Comparative Climatology of the Terrestrial Planets" (25-28 June 2012). Following this, our attention will focus on the organization of ICPAE sessions in Switzerland for the Davos Atmosphere and Cryosphere Assembly (<http://www.daca13.org/>) in July 2013, in addition to pursuing topical sessions at 2012 conferences with the Division of Planetary Sciences (DPS of AAS), the European Geophysical Union (EGU), the Asia and Oceania Geophysical Society (AOGS), the Committee on Space Research (COSPAR) and European Planetary Science Congresses (EPSC).

2011 saw the launch of two important new missions for ICPAE: the Juno mission to Jupiter and the Curiosity mission to Mars. ICPAE members are well-represented in proposals for future space missions and observatories, including (but not limited to): future exploration of Jupiter and its icy moons (such as the ESA JUICE concept); orbital missions to Uranus; exoplanet characterization missions; and medium-class missions for Venus, Mars and small bodies in our solar system. The ICPAE also recognizes the importance of maintenance and upgrade for the host of world-class ground-based observatories to continue pushing the boundaries of planetary atmospheric science.

The ICPEA Bureau:

Sanjay Limaye (President),  
Leigh Fletcher (Vice President),  
Mathieu Hirtzig (Secretary).

## One litre to Michael KUHN

*Prof. Michael KUHN, Secretary-General of IAMAS from 1987-1995 retired from his chair at the University of Innsbruck, Austria. A large crowd paid tribute at a Festkolloquium on 6 October 2011 (cf. photos on [www.adabei.info/Downloadarea/Festkolloquium/](http://www.adabei.info/Downloadarea/Festkolloquium/)). On behalf of IAMAS Hans Volkert presented Michael with a personalized one-litre-beer-jar, with a commemorative letter and a (covered) tin of Bavarian Oktoberfest beer. It was happily received.*



## IAMAS-liaison with WMO resumed



*Since 1962 IUGG and WMO have had formal liaisons for mutual information. At IUGG-2011 Hans Volkert was appointed as IUGG liaison for the atmosphere together with Arthur Askew for hydrology and Arnaud Folch for volcanology. On 31 October 2011 Arthur and Hans met with WMO officials Deon Terblanche and Tetsuo Nakasawa in Geneva. The mutual support of meetings as DACA-13 and the Open Science Conference of WMO-WWRP in the same year was agreed upon.*

## Upcoming Meetings

In addition to participating in the IUGG and IAMAS Scientific Assemblies, the IAMAS commissions also carry on a number of activities between the IAMAS and IUGG assemblies. In addition to helping organize symposia at a range of scientific meetings led by other organizations, planned conferences coming up include:

- The International Commission on Clouds and Precipitation will hold the 16th International Conference on Clouds and Precipitation in Leipzig, Germany from 30 July to 3 August 2012. Supported by IUGG.
- The International Radiation Commission will hold the International Radiation Symposium 2012 from 5 - 12 August 2012 in Berlin, Germany. Supported by IUGG.
- In addition to convening a number of regional workshops, the International Commission on Air Chemistry and Global Pollution will co-sponsor many of the symposia being held at the International Global Atmosphere Chemistry (IGAC) meeting in Beijing, China 17-21 September 2012. Supported by IUGG.
- Also in Melbourne, planning began for the joint IAMAS/IACS Scientific Assembly to be held 8-12 July 2013 in Davos, Switzerland. It is also expected that IAPSO and IAHS will be co-sponsors of some of the symposia to be organised. At this meeting, planning will also begin for the XXVI IUGG General Assembly, which IUGG decided to hold in July 2015 in Prague.

### The IAMAS Newsletter

We welcome short reports from the individual IAMAS Commissions at any time.

Dr Tom Bracegirdle (tjbra at bas.ac.uk).