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Press Release

(for immediate release)

Committee on Space Research (COSPAR)

Awards 2012

To be presented on 16 July during the 39th COSPAR Scientific Assembly

14 - 22 July 2012, Mysore, India

See below for complete citations and a brief description of COSPAR.

- COSPAR Space Science Award for outstanding contributions to space science:

Janet Luhmann (USA), Space Sciences Laboratory, University of California, Berkeley, California

- COSPAR International Cooperation Medal for distinguished contributions to space science and work that has contributed significantly to the promotion of international scientific cooperation:

Roger-Maurice Bonnet (France), International Space Science Institute, Bern, Switzerland

- COSPAR William Nordberg Medal commemorating the late William Nordberg and for distinguished contributions to the application of space science in a field covered by COSPAR:

Herbert Fischer (Germany), Institute for Meteorology and Climate Research (IMK-ASF)
Karlsruhe Institute of Technology

- COSPAR Harrie Massey Award honoring the memory of Sir Harrie Massey, FRS, for outstanding contributions to the development of space research in which a leadership role is of particular importance:

Neil Gehrels (USA), Astroparticle Physics Laboratory, NASA Goddard Space Flight Center, Greenbelt, Maryland

- COSPAR Distinguished Service Medal for extraordinary services rendered to COSPAR over many years:

Peter Willmore (United Kingdom), School of Physics & Astronomy, University of Birmingham

- Vikram Sarabhai Medal (a joint award of COSPAR and the Indian Space Research Organization) honoring Vikram Sarabhai, one of the architects of modern India, for outstanding contributions to space research in developing countries:

Rafael Navarro-Gonzalez (Mexico), Laboratory of Plasma Chemistry and Planetary Studies, UNAM, Mexico

- Jeoujang Jaw Award (a joint award of COSPAR and the Chinese Academy of Sciences) recognizing scientists who have made distinguished pioneering contributions to promoting space research, establishing new space science research branches and founding new exploration programs:

Robert P. Lin (USA), Space Sciences Laboratory, University of California, Berkeley, California

- Yakov B. Zeldovich Medals (a joint award of COSPAR and the Russian Academy of Sciences) conferred on young scientists for excellence and achievements, honoring the distinguished astrophysicist Yakov B. Zeldovich. One medal is awarded for each COSPAR Scientific Commission:

- *COSPAR Scientific Commission A*

Jadunandan Dash (India/United Kingdom)
School of Geography, University of Southampton

in recognition of original contributions to monitoring of vegetation dynamics from satellite observations

- *COSPAR Scientific Commission B*

Bethany L. Ehlmann (USA)
California Institute of Technology Research Scientist and Jet Propulsion Laboratory

for fundamental discoveries of aqueous mineral phases on Mars which have transformed our understanding of aqueous processes on Mars and its potential for habitability

- *COSPAR Scientific Commission C*

Tatsuhiro Yokoyama (Japan)
Research Institute for Sustainable Humanosphere, University of Kyoto

for his innovative modeling and experimental studies that helped resolve several outstanding problems concerning E and F region coupling processes

- *COSPAR Scientific Commission D*

Jonathan P. Eastwood (United Kingdom)
The Blackett Laboratory, Imperial College London

for outstanding research into the basic properties of collisionless plasmas in space which has led to a significant advancement of our understanding of magnetic reconnection and collisionless shocks

- *COSPAR Scientific Commission E*

Makoto Uemura (Japan)
Hiroshima Astrophysical Science Center, Hiroshima University

for his fundamental research in time domain astronomy leading to understanding of the optical and near-infrared signatures of explosive events in the universe

- *COSPAR Scientific Commission F*

Chiara La Tessa (Italy/Germany)

Biophysics Department, GSI Helmholtzzentrum fuer Schwerionenforschung, Darmstadt

in recognition of her outstanding contribution to the investigation of shielding materials for space radioprotection

- *COSPAR Scientific Commission G*

Michael Lukasser (Austria)

Vienna University of Technology

for outstanding progress in code development essential for the choice of best parameters for the space experiment JEREMI

- *COSPAR Scientific Commission H*

Peter J. Wass (United Kingdom)

The Blackett Laboratory, Imperial College London

in recognition of his seminal work on the charging rate of accelerometer proof masses and the limitations on performance of Fundamental Physics missions that arises from cosmic ray charging.

CITATIONS

- COSPAR Space Science Award:

Janet Luhmann (USA)

Dr. Janet G. Luhmann, recipient of this year's COSPAR Space Science Award, is a Senior Fellow at the Space Sciences Laboratory of the University of California Berkeley and the Principal Investigator of the IMPACT suite of instruments on the twin spacecraft STEREO mission. Following her Ph. D. in Astronomy from the University of Maryland, she joined the particles and Fields Department of the Aerospace Corporation in El Segundo California. In 1980 she joined the Institute of Geophysics and Planetary Physics at the University of California, Los Angeles, moving to her current position in Berkeley in 1994.

Janet Luhmann started her career in cosmic ray physics, both observation and theory; at Aerospace she moved into studies of the X-ray fluxes from the Earth's atmosphere; at UCLA she expanded into radar studies of the Earth's Upper Atmosphere and in parallel the interaction of the solar wind with Venus completely changing the paradigms in both fields. From Venus it was a short hop to Mars where she showed how dust storms lead to ionospheric changes due to heating of the upper atmosphere. At Berkeley she moved deeper into the origin of interplanetary disturbances and the structure of the coronal magnetic field as well as leading the development and integration of the IMPACT sensor suite for the STEREO mission, all the while keeping up with her growing interests in the outer planets, especially the study of the interaction of the Saturnian magnetosphere with its moon, Titan, using data from the Cassini mission. Currently in addition to STEREO and Cassini she is studying Venus Express observations and helping prepare the Mars mission, Maven, for its upcoming investigation of the Martian upper atmosphere. She has been a regular contributor to the scientific exchanges of COSPAR Commissions B, C, D, and E for over 30 years and has chaired important panels and committees for the American Geophysical Union, the US National Academy, NASA and IAGA.

She is a most deserving recipient of this award.

- COSPAR International Cooperation Medal:

Roger-Maurice Bonnet (France)

The career of Roger-Maurice Bonnet has been very closely linked to the promotion of international cooperation for at least thirty years. Important ESA projects producing a wealth of findings were

executed during or had their origins in the period when Professor Bonnet headed the ESA Science Directorate. Furthermore, pioneering scientific links with Russia and China were established due to the persistent and personal involvement of Professor Bonnet. The results of his efforts include the very successful Giotto-Vega-Sakigake and Cluster-Double Star missions. The joint Cassini-Huygens mission, which returned spectacular results from Saturn and Titan, also was originally planned under the leadership of Professor Bonnet.

As President of COSPAR Professor Bonnet presided over four very successful COSPAR Scientific Assemblies. Special attention was devoted to encouraging participation by young scientists and students through travel grants, outstanding paper awards, attributing organizational responsibilities, and so forth, all of which rapidly increased attendance by the next generation at the Scientific Assemblies and gave COSPAR a higher profile in a number of countries. The COSPAR Scientific Advisory Committee (CSAC), which helps to identify how best to promote international cooperation, was one of Professor Bonnet's initiatives. The Capacity Building Workshops, greatly developed during his presidency, have also been very effective in promoting international cooperation and active involvement of developing countries in international space research.

Since 2003 Professor Bonnet has lead the International Space Science Institute (ISSI), and made it one of the most effective tools to study particular problems in space science. The scope of topics addressed by ISSI has expanded due to Professor Bonnet's strategic vision, and the Institute's partners have re-enforced their involvement as illustrated by the nomination of a NASA representative to the Board, by the contribution of the Russian Academy of Sciences to the ISSI budget, and by the association to ISSI of the National Space Science Center of China and of the Japanese Center for Planetary Sciences. Professor Bonnet for the last ten years has been the intellectual motor behind these advances. Roger-Maurice Bonnet is, indeed, a most deserving recipient for the 2012 COSPAR International Cooperation Medal.

- COSPAR William Nordberg Medal:

Herbert Fischer (Germany)

Professor Herbert Fischer has been one of the European pioneers of atmospheric remote sensing over the past four decades. In the 1970s whilst at the Institute of Meteorology of the Ludwig Maximilian University in Munich, he began his career and was a scientific investigator on some of the earliest NASA NIMBUS atmospheric remote sensing missions and part of the NASA LIMS team. In the 1980s, he began the development of the Michelson Interferometer for Passive Atmospheric Sounding, MIPAS. After becoming director of the Institute of Meteorology and Climate research at the University of Karlsruhe and Research Center Karlsruhe, he led the MIPAS space proposal, which was selected for flight on the ESA POEM-1, now called the ESA Envisat. MIPAS measures the emission of the atmosphere in thermal infrared spectral region in limb viewing geometry at a high spectral resolution to observe unambiguously trace gas features. Inversion of these measurements yields the amounts and distributions of a variety of trace gas constituents and parameters in the region of the upper troposphere to the thermosphere. In addition, the MIPAS balloon borne and aircraft instruments have been developed and very successfully exploited. Overall a unique set of observations for atmospheric and climate research has been provided. Through his work on MIPAS, Herbert Fischer has become internationally respected. He has developed a world class research institute, training a generation of atmospheric and climate researchers, as well as undertaking much community service in a variety of national and international functions. In conclusion Herbert Fischer is a worthy recipient of the COSPAR Nordberg Medal; he has followed well in Nordberg's steps exploiting the precise measurement of thermal infrared radiation from space to retrieve unique information about atmospheric composition and dynamics during a key phase of the evolving anthropocene.

- COSPAR Massey Award:

Neil Gehrels (USA)

Neil Gehrels received his B.S. (Honors) in physics from the University of Arizona and his Ph.D. in physics from Caltech in 1982. He began his career at Goddard as an experimental physicist working in gamma-ray astronomy, active in instrument development, data analysis, and theory. Dr. Gehrels has been Project Scientist for the Compton Observatory and now is Mission Scientist for INTEGRAL (2002-present) and Deputy Project Scientist for the Fermi Space Telescope (2008-present). Dr. Gehrels is the Principal Investigator for the SWIFT mission and his main interests include gamma-ray bursts and supernovae explosion processes. He now serves as Chief of the Astroparticle Physics Laboratory, NASA/GSFC, is College Park Professor of Astronomy at the University of Maryland, and is Adjunct Professor of Astronomy & Astrophysics, Penn State.

Throughout his career, Dr. Gehrels has been dedicated to advancing high energy astrophysics from space and to increasing our understanding of explosive events in the universe. His pioneering contributions have opened up the gamma-ray range as an astronomical discipline through his leadership of the Compton Gamma Ray Observatory and the SWIFT Mission. His contributions have significantly increased our understanding of gamma-ray phenomena, unveiling the long-sought origin of short gamma-ray bursts.

It is for these reasons, and many more, that Dr. Gehrels is a well-deserving recipient of the 2012 COSPAR Massey Award.

- COSPAR Distinguished Service Medal:

Peter Willmore (United Kingdom)

Professor Peter Willmore was the driving force behind COSPAR Capacity Building activities. It is due to his perseverance and leadership that the Bureau's decision to engage in these activities became a reality. He was involved in organizing the first workshop in 2001 and actively engaged in the organization of almost all workshops through the eleventh in early 2010. He has continued to contribute to workshops in his field as a lecturer, including the one held in Argentina in summer 2011. Perhaps more importantly, Professor Willmore was instrumental in defining the purpose and shaping the structure of the capacity building program, expanding the scope of the workshops from astrophysics to Earth observations and planetary science, developing post-workshop evaluation practices, and in general making this a known and respected series of training activities to a large number of outside organizations, many of which continue to sponsor regularly workshops in their field.

Furthermore, Professor Willmore is at the origin of the follow-on Fellowship Program which is now a well-established option for a growing number of graduates of the workshops and in which an ever expanding number of institutes participates by hosting students. He also served two terms as founding Chair of the COSPAR Panel on Capacity Building (PCB) which he helped create further to the success of the first workshops.

In addition to his immeasurable input to capacity building activities, Professor Willmore has contributed in many ways to COSPAR activities for as long as the Committee has existed. While I do not know the details of every activity he has engaged in on COSPAR's behalf, he was present at the first COSPAR space science symposium in 1960 and certainly had many opportunities in the intervening period to promote our Committee in the UK and farther afield. For instance, he continues to serve as National Representative and was a Bureau member (1994 - 2002), Bureau observer for capacity building affairs (2002 - 2010), Chair of the Nominations Committee (2010 - 2014), not to mention member of the Publications Committee, member of many Assembly Resolutions and Recommendations Committees, the 50th Anniversary Committee, and the now disbanded Meetings Committee. Professor Willmore also led the group which re-evaluated the COSPAR national contribution scheme in the late 1990s, an exhaustive two year review which resulted in much detailed analysis and no doubt contributed to a certain degree to the current satisfactory state of COSPAR finances.

While there are certainly many other contributions I have overlooked, let me just conclude by mentioning that Professor Willmore organized the very memorable 1996 Scientific Assembly in Birmingham and that it was he who in 2005 or 2006 came to this campus and made the initial recommendation for Mysore as the site of a future Assembly to be held in India.

By any measure Professor Willmore is a most deserving recipient of the COSPAR Distinguished Service Medal, and it is my particular pleasure to bestow this honor on him here at this Assembly.

- COSPAR/ISRO Vikram Sarabhai Medal:

Rafael Navarro-Gonzalez (Mexico)

Professor Rafael Navarro-Gonzalez is a very distinguished scientist in geological sciences and astrobiology. He has made several outstanding contributions in the fields of soil chemistry on Mars, origin and evolution of life on Earth and Mars, role of aerosols in the Titan atmosphere and physico-chemical properties of thunderstorms and lightning and their impact on the origin and evolution of life. His investigation of Mars clearly points to the presence of organic material in the Martian soil at PPM level. Professor Gonzalez's voluminous research encompasses laboratory simulations, field work and theoretical modelling cutting across chemistry, physics and biology. In recognition of significant contributions made, Professor Gonzalez has been selected as a member of the science team by NASA for the astrobiology experiment on the Mars Rover during the forthcoming Mars Mission.

Professor Gonzalez has published well over 100 well-cited papers. COSPAR and the Indian Space Research Organisation are truly honoured to award the Vikram Sarabhai Medal 2012 to Professor Navarro-Gonzalez of Mexico for his outstanding research contributions in astrobiology.

- COSPAR/CAS Jeoujang Jaw Award:

Robert P. Lin (USA)

Professor Lin is a world-renowned experimentalist and space scientist; his primary interest is in how particles are accelerated to high energies in nature, from the sun and in the interplanetary medium.

Professor Lin led the pioneering RHESSI (Ramaty High Energy Solar Spectroscopic Imager) mission that made the high resolution imaging and spectroscopy of the x-rays and gamma-rays emitted by energetic particles accelerated by solar flares. The accomplishments of this mission include the first hard X-ray imaging spectroscopy, the first high-resolution spectroscopy of solar gamma-ray lines, the first imaging above 100 keV, and the first imaging of solar gamma-ray lines. The mission is still returning excellent data after almost ten years in orbit and has detected more than 30,000 solar flares referenced in more than 800 refereed publications.

In addition to RHESSI, Professor Lin has also led the development of various innovative energetic particle and plasma instruments that have been flown on space missions and have provided in situ measurements of plasma and fields in the Earth's magnetosphere and upstream. These instruments have also gathered valuable information on the origin and dynamics of the solar wind and the interaction of the Earth's magnetosphere with the solar wind. Furthermore, Professor Lin has developed instruments for mapping the surface magnetic fields of Mars and the Moon by means of electron reflection magnetometry.

The accomplishments above, and many more, make Professor Lin a most worthy recipient of the Jeoujang Jaw Award which recognizes distinguished pioneering contributions to promoting space research, establishing new space science research branches and founding new exploration programs.

COSPAR TODAY

The Committee on Space Research (COSPAR) has both National Scientific Institutions and International Scientific Unions as members. Forty-six National Scientific Institutions engaged in space research and thirteen International Scientific Unions adhering to the International Council for Science (ICSU) belong to COSPAR. Moreover, approximately 8000 scientists actively engaged in space research are COSPAR Associates. Companies and organizations interested in supporting COSPAR activities may also become Associated Supporters of the Committee.

COSPAR acts mainly as an entity which:

- is responsible for organizing biennial Scientific Assemblies with strong contributions from most countries engaged in space research. These meetings allow the presentation of the latest scientific results, the exchange of knowledge and also the discussion of space research problems. Over several decades providing this service has brought recognition to the COSPAR Scientific Assembly as the premier forum for presenting the most important results in space research in all disciplines and as the focal point for truly international space science. In this regard it should be observed that COSPAR has played a central role in the development of new space disciplines such as life sciences or fundamental physics, by facilitating the interaction between scientists in emergent space fields and senior space researchers,
- provides the means for rapid publication of results in its journal *Advances in Space Research*,
- strives to promote the use of space science for the benefit of mankind and for its adoption by developing countries and new space-faring nations, in particular through a series of Capacity Building Workshops which teach very practical skills enabling researchers to participate in international space research programs,
- organizes, on a regional scale, scientific exchange and public outreach on specific research topics, in the framework of Colloquia and Symposia,
- advises, as required, the UN and other intergovernmental organizations on space research matters or on the assessment of scientific issues in which space can play a role, for example the

Group on Earth Observations (GEO), in which COSPAR is a Participating Organization and co-chair of its Scientific and Technology Committee,

- prepares scientific and technical standards related to space research,
- promotes, on an international level, research in space, much of which has grown into large international collaborative programs in the mainstream of scientific research.

COSPAR's objectives are to promote on an international level scientific research in space, with emphasis on the exchange of results, information and opinions, and to provide a forum, open to all scientists, for the discussion of problems that may affect scientific space research. These objectives are achieved through the organization of Scientific Assemblies, publications and other means.

ICSU established COSPAR during an international meeting in London in 1958. COSPAR's first Space Science Symposium was organized in Nice in January 1960. COSPAR is an interdisciplinary entity that ignores political considerations and views all questions solely from the scientific standpoint.

A complete list of previous award recipients may be found at:

<http://cosparhq.cnes.fr/Awards/awards.htm>

Further information on COSPAR is available at:

<http://cosparhq.cnes.fr>

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