COSPAR
ESTABLISHED BY ICSU:
THE INTERNATIONAL
COUNCIL FOR SCIENCE
COMMITTEE ON SPACE RESEARCH

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Press Release

(for immediate release)

Committee on Space Research (COSPAR)

Awards 2008

To be presented on 14 July during the 37th COSPAR Scientific Assembly

13 - 20 July 2008, Montreal, Canada

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

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

George Gloeckler (USA), Universities of Michigan and Maryland

and

Ken Pounds (UK), University of Leicester

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

Marvin A. Geller (USA), State University of New York at Stony Brook

- 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:

Joe W. Waters (USA), Jet Propulsion Laboratory, Pasadena, California

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

Isaac Révah (France), former COSPAR Executive Director, Paris

- Massey Award (a joint award of COSPAR and the Royal Society of London) 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:

Giovanni G. Fazio (USA), Harvard Smithsonian Center for Astrophysics, Cambridge, Massachusetts

- 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:

Mangalathayil A. Abdu (Brazil), Instituto Nacional de Pesquisas Espaciais (INPE), Sao Jose dos Campos

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

James L. Burch (USA), Southwest Research Institute, San Antonio, Texas

- 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*

Kauzar Saleh Contell (UK/Spain)
University of Cambridge

in recognition of scholarly contributions on innovative analysis methods for the first measurements of soil moisture from space.

- COSPAR Scientific Commission B

No award in 2008

- COSPAR Scientific Commission C

Jonathan J. Makela (USA)
University of Illinois, Urbana-Champaign

for his innovative experimental observations and studies of the growth, structure, and drift of ionospheric irregularities.

- COSPAR Scientific Commission D

Olena Podladchikova (Belgium/Ukraine)
Royal Observatory of Belgium, Brussels

for significant progress in understanding the role of small scale sources for coronal heating through the development of statistical models and a new approach to statistical studies using automatic recognition.

- COSPAR Scientific Commission E

Sergey A. Bogachev (Russia)
Lebedev Physical Institute, Moscow

for his research on particle acceleration and solar hard X-ray emission, of seminal importance for solar flare and astrophysics studies.

- COSPAR Scientific Commission F

Thomas Berger (Germany/Austria)
Deutsches Zentrum für Luft- und Raumfahrt eV (DLR), Koeln

in recognition of his outstanding contributions to the specification of radiation detectors and their use for measurements in the space radiation field especially during the MATROSHKA study essential for estimating astronaut radiation risk.

- COSPAR Scientific Commission G

Farzam Zoueshtiagh (France/Iran)
Laboratoire de Mecanique, Lille

in recognition of his scholarly contributions to the study of experimental interfacial fluid mechanics.

- COSPAR Scientific Commission H

Tim van Zoest (Germany)
Institut fuer Quantenoptik, Leibniz Universitaet, Hannover

in recognition of his pioneering achievements in the preparation of ultra-cold quantum gases for microgravity environments.

CITATIONS

- COSPAR Space Science Award:

George Gloeckler (USA)

George Gloeckler is among the most innovative and influential experimentalists in the study of the Sun, the heliosphere, and the magnetospheres of the Earth and other planets. In the late 1960s he developed a new class of solid-state instruments that could determine the composition of relatively low-energy ions (~1 MeV/nucleon), which are rich in information about the origin of energetic particle populations. In the 1970s he developed and flew instruments to determine the elemental as well as the ionic-charge composition of low-energy energetic particles. The most significant advance in instrumentation came in the late 1970s with the invention of a new class of instrumentation that is capable of measuring simultaneously the mass, charge, and energy of plasma particles with unprecedented sensitivity.

George Gloeckler has used the data from his instruments to make major discoveries concerning plasma and energetic particles from the Sun, in the magnetospheres of the planets and in the heliosphere, and also concerning the conditions in the local interstellar medium. He has exploited the information that is available in pickup ions, which result from neutral gas that is ionized in the solar wind, and in doing so has created a new field of research. He has determined the composition of the solar wind, and the information it contains on basic processes occurring in the solar corona. In recent years, George Gloeckler has devoted his insightful analysis to energetic particles that are accelerated in the solar wind, making the profound discovery that the spectra have a common spectral index in many different settings.

George Gloeckler is also known for his leadership in both his scientific discipline and in scientific cooperation between Europe and the United States. He has encouraged and supported the development of experimental capabilities within Europe, and in light of all these and other accomplishments, it is a pleasure to bestow the COSPAR Space Science Award on him.

Ken Pounds (UK)

Professor Ken Pounds, recipient of this year's COSPAR Space Science Award, is Emeritus Professor of Space Physics at the University of Leicester. Following a PhD in Physics from University College London he moved to Leicester in 1960, forming a new research group in Space Astronomy.

An experiment on Ariel 1 in 1962 recorded the first low resolution X-ray spectra of the Sun, showing the strong flux and temperature variability of the coronal emission, and resolving the hard X-ray bursts arising from solar flares. Later solar experiments were flown on several NASA spacecraft and on ESRO-2. Pounds' group were early entrants to the new field of X-ray astronomy with a series of Skylark rocket flights from Woomera. Subsequently, the Leicester Sky Survey Instrument on the Ariel 5 satellite (1974-80) yielded many important discoveries; including the extremely bright transient source A0620-00 (now a primary galactic black hole candidate); establishing powerful X-ray emission to be a common property of active galaxies (AGN); and a catalogue of over 300 X-ray sources which underpinned research for many years. Under Ken Pounds' direction the Leicester group's international impact was extended with major hardware and science roles in the EXOSAT, GINGA and ROSAT missions. Highly cited papers over this period (1983-94) report the rapid and large amplitude X-ray

variability of AGN, Fe K fluorescence and continuum X-ray reflection as new diagnostic features, and the first all sky catalogue of XUV sources. Most recently Pounds has been using the XMM-Newton Observatory to explore the importance of energetic outflows in AGN.

Over a 50 year career, Ken Pounds has contributed to the development of X-ray Astronomy as a major part of modern astrophysics. He has held important responsibilities in the astronomical (Vice-President of IAU) and space communities (Vice-Chairman of the COSPAR Commission on Research in Astrophysics from Space). He is a past President of the Royal Astronomical Society and was the first (1994-8) Chief Executive of the UK Particle Physics and Astronomy Research Council. In 1989 he received the RAS Gold Medal and in 2007 the Planetary Award of the Association of Space Explorers. He is now the well deserving recipient of the COSPAR Space Science Award.

- COSPAR International Cooperation Medal:

Marvin A. Geller (USA)

The COSPAR International Cooperation Medal is awarded to a scientist who has made distinguished contributions to space and Earth science and whose work has contributed significantly to the promotion of international scientific cooperation. The 2008 Medal is awarded to Marvin A. Geller.

Dr. Geller, an outstanding atmospheric scientist, is the father of the Stratospheric Processes and their Role in Climate program, known as SPARC, a core element of the World Climate Research Program or WCRP. He set the science goals and strategy and won approval from WCRP for the establishment of SPARC. For the first ten years of SPARC, Dr. Geller led the program as co-chair. From the beginning, Dr. Geller envisioned SPARC as an international collaboration to address important scientific problems in stratospheric research. Under Dr. Geller's leadership, SPARC produced outstanding assessments on the coupling between the Earth's lower atmosphere, upper atmosphere, and solar radiation. The Intergovernmental Panel on Climate Change or IPCC and the World Meteorological Organization or WMO utilized the SPARC scientific assessments. Dr. Geller was personally involved in organizing and helping to obtain funding for the SPARC Data Center, which provides stewardship and worldwide distribution of SPARC data. After SPARC was well established, Dr. Geller served with great distinction for two elected terms as President of the Solar Terrestrial-Energy Program of the Scientific Committee for Solar-Terrestrial Physics, an element of the International Council for Science, known as ICSU. Under Dr. Geller's leadership, a new program named Climate and Weather in the Sun-Earth System was conceived, developed and implemented for scientists from all countries.

Dr. Geller epitomized the recognition that scientists working together will achieve breakthroughs that will forever elude individuals working independently. Dr. Geller's deep understanding of scientific issues, his inclusiveness of others, his ability to attract the world's foremost experts to volunteer their time, and his sensitivity of cultural issues enabled his outstanding successes. For his exceptional scientific and leadership contributions to the improved understanding of the chemistry, physics and thermodynamics of the stratosphere and its interactions with the troposphere, I am pleased to present Dr. Marvin A. Geller the COSPAR International Cooperation Medal.

- COSPAR William Nordberg Medal:

Joe W. Waters (USA)

Dr. Joe Waters' 37-year scientific career has been marked by sustained exceptional achievements and leadership in the field of satellite remote sounding of atmospheric composition. His crowning successes have been as Principal Investigator of the two Microwave Limb Sounder (MLS) instruments flown on NASA's Upper Atmosphere Research Satellite (UARS, launched 1991) and Aura (launched 2004) missions. These instruments have revolutionized the study of atmospheric composition from space, their observations having been used in more than 375 peer-reviewed scientific publications, including ground-breaking studies of the stratospheric ozone layer, climate, and air quality. In addition to his outstanding leadership of these experiments, Dr. Waters has himself authored 196 peer-reviewed scientific publications over his career, including 13 in Science or Nature. Dr. Waters was identified as the 16th most cited author in geoscience for the decade 1991–2001.

Dr. Waters pioneered the development of balloon- and aircraft-based microwave instruments to measure ozone and chlorine monoxide, the primary agent for ozone destruction in the stratosphere [Waters et al., Science, 1981]. This led him to conceive and pioneer the satellite-based MLS instruments. The first MLS was one of ten instruments on NASA's UARS. The very first UARS MLS observations in September 1991 clearly showed the Antarctic 'ozone hole.' The Aura MLS instrument, launched in 2004, is a greatly enhanced version of the MLS instrument flown on UARS. Dr. Waters'

foresight and leadership continue to be amply demonstrated, most recently by development and advocacy of the 'Scanning Microwave Limb Sounder' concept.

Dr. Waters' manifold accomplishments and unique combination of vision, perseverance, wisdom, focus, and scientific and technical expertise have combined to make him one of the truly exceptional leaders in atmospheric science, clearly meriting the highest honors that can be bestowed by the scientific community.

- COSPAR Distinguished Service Medal:

Isaac Révah (France)

Dr Isaac Révah graduated from the Sorbonne University in Paris. In 1962 he joined the French *Centre National d'Etudes des Télécommunications*, where he worked as a research scientist and studied the dynamics of the lower ionosphere. He spent two years in 1970-1971 in Dr William Nordberg's group at the NASA Goddard Space Flight Center where he developed an original inversion method applied to Nimbus satellite data for the study of the vertical structure of the Earth's atmosphere, later also used for the study of planetary atmosphere. Back in France, he moved to lower atmosphere research, and played a leading role in the development of a new generation of meteorological radars and acoustic sounders. He became the head of the renowned *Centre de Recherches en Physique de l'Environnement*, an institute with over 189 researchers and engineers active in space plasma physics and ground-based and satellite remote sensing of the Earth's surface and atmosphere.

In 1984 Dr Révah was appointed by CNES, the French space agency, Director of Programs. Under his leadership a number of space missions involving cooperation with European partners, the USA, and Russia were decided. He also led the CNES Environment Programs Directorate and the External Relations Directorate before his retirement in 1998. He then worked with the French Academy of Sciences until January 2001 when he was appointed Executive Director of COSPAR.

At all times during his brilliant scientific career Isaac Revah was an active member of academic institutions such as URSI and a participant in numerous COSPAR Assemblies. His seven years of service as Executive Director from 2001 through 2008 have been exceptionally successful for COSPAR, with the World Space Congress in Houston in 2002, the memorable Assembly held in Paris in 2004 with record attendance, the wonderful 36th Assembly in Beijing in 2006, and now this present Assembly in Montréal, the initial preparation of which was made under his direction.
In recognition of the exceptional services rendered to COSPAR, I am delighted to award the COSPAR Distinguished Service Medal to Dr Isaac Révah.

- Massey Award:

Giovanni G. Fazio (USA)

Citation not yet available.

- Vikram Sarabhai Medal:

Mangalathayil A. Abdu (Brazil)

Dr. Mangalathayil Ali Abdu born in the state of Kerala, India on 7 July, 1938 has made significant contributions to the studies of equatorial aeronomy. After his graduation and post graduation in Kerala, he joined the Physical Research Laboratory, founded by the father of the Indian Space program, (late) Professor Vikram Sarabhai, in whose memory and honour this award is being presented, to do his doctorate in Ionospheric physics. After a brief stint as a postdoctoral fellow in Canada, he moved over to Brazil in 1971, to take up teaching in Sao Palo. From 1973 till date he has been associated with the Brazilian Institute of Space Research (INPE) in Sao Jose dos Campos as one of the senior researchers and as a motivator. From 1992 to 1996 he spearheaded aeronomy research in INPE as the head of the division.

Dr. Abdu was instrumental for a series of sounding rocket experiments from Brazil, design and implementation of an ionospheric research station in Sao Luis city and establishment of a VHF radar facility in Brazil in addition to development of several satellite experiments.

He has made fundamental and pioneering contributions to equatorial electrodynamics in general, and phenomena like equatorial ionization anomaly, equatorial electro jet, equatorial spread F, ionosphere-thermosphere coupling processes, ionosphere-magnetosphere coupling and the like.

Apart from his individual scientific contributions, Dr. Abdu fostered Space Research in Brazil, spearheaded several international collaborations with other South American countries, and also with Japan, the United States and India. He successfully organized international coordinated, innovative experimental campaigns like COPEX (Conjugate Point Experiment) by making use of the availability of geo-magnetically conjugate locations within Brazil. Dr. Abdu has striven for the cause of basic space sciences - in the Latin American countries in particular. He has more than 200 publications in refereed journals to his credit.

In view of Dr. Mangalathayil Ali Abdu's remarkable spirit of scientific cooperation, his significant discoveries pertaining to equatorial electro-dynamics, the global coupling processes in the Ionosphere-Thermosphere-Magnetosphere systems and for his pioneering efforts in the development of ground based and space borne experiments and above all for his relentless efforts to promote space sciences in developing countries, ISRO and COSPAR are very pleased to present the Vikram Sarabhai Award to Dr. Mangalathayil Ali Abdu for the year 2008.

- Jeoujang Jaw Award:

James L. Burch (USA)

The Jeoujang Jaw Award recognizes scientists who have made distinguished pioneering contributions to promoting space research, establishing new space science research branches and founding new exploration programs.

The 2008 Medal is awarded to Dr James L. Burch. Dr. Burch was born in 1942. He received his Ph D in Physics from Rice University, and followed with a series of outstanding contributions in space particle exploration. In 2000, as the P.I. of the NASA IMAGE Satellite Mission, Dr. Burch pioneered the use of global magnetospheric imaging for the study of the dynamics of the inner magnetosphere and magnetosphere-ionosphere coupling. The results of his work have provided new views of the plasmasphere, ring current and proton aurora that have verified existing theories, identified new unpredicted features and demonstrated important responses of these phenomena to changes in the interplanetary magnetic field. These contributions were the beginning of a new era of Earth magnetosphere exploration with imaging type instruments.

COSPAR TODAY

The Committee on Space Research (COSPAR) has both National Scientific Institutions and International Scientific Unions as members. Forty-four 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 6000 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 a body 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.
• as an entity whose role, in addition to providing a meeting ground for scientists involved in fundamental research, is also to provide the means for rapid publication of results, in its journal and colloquia proceedings,
• as a body organizing, on a regional scale, scientific exchange on specific research topics, in the framework of Colloquia.
• as a scientific committee advising, 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,
• as a panel for the preparation of scientific and technical standards related to space research,
• as an entity promoting, on an international level, research in space, much of which has grown into large international collaborative programs in the mainstream of scientific research. COSPAR 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.

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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