



## COSPAR 2022 AWARDS

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### **Press Release (for immediate release) Committee on Space Research (COSPAR)**

COSPAR is happy to announce the winners of its 2022 Awards, to be presented during the 44<sup>th</sup> COSPAR Scientific Assembly in Athens, Greece. COSPAR bestows a number of medals and awards each year – some jointly with other institutions or space agencies – upon endorsed candidates of merit. Scientists who have made an outstanding contribution to space research and are working in any of the fields covered by COSPAR are eligible. The coveted COSPAR Awards are aimed at encouraging space science and exploration research and are an important step to achieve international cooperation in the field. This year's nominees have come from a wide range of backgrounds and after careful consideration by the Awards Committee, Bureau, and partner organizations the following selection has been made.

A complete list of citations and a brief description of COSPAR are included below. Previous citations for honors awarded at COSPAR Assemblies can be found [online](#).

#### **To be presented on 18 July during the 44th COSPAR Scientific Assembly 16 – 24 July 2022, Athens, Greece**

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

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

**James W. Head, III (USA)**, Department of Earth, Environmental and Planetary Sciences, Brown University, Providence, Rhode Island

**Alan Title (USA)**, Stanford Lockheed Institute for Space Research, Palo Alto, CA

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

**WU Ji (China)**, National Space Science Center, Beijing

- 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:

**Gerda Horneck (Germany)**, Inst. of Aerospace Medicine, Radiation Biology, German Aerospace Centre (DLR), Cologne, retired

**Joyce E. Penner (USA)**, Dept. of Climate and Space Sciences and Engineering, University of Michigan, Ann Arbor, MI

- 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:

**Pascale Ehrenfreund (USA)**, Space Policy Institute, George Washington University, Washington, DC and President, International Astronautical Federation (IAF)

- COSPAR Distinguished Service Medal recognizing extraordinary services rendered to COSPAR over many years.

**Willem Hermsen (Netherlands)**, SRON Netherlands Institute for Space Research, Leiden and Anton Pannekoek Institute for Astronomy, University of Amsterdam

- 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:

**Christine Amory-Mazaudier (France)**, Sorbonne Université, Ecole Polytechnique, Institut Polytechnique de Paris, Univ. Paris Saclay, Observatoire de Paris, CNRS, Laboratoire de Physique des Plasmas (LPP), Paris



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### - Outstanding Paper Awards for Young Scientists

List of forty-six 2022 recipients available at:

[https://cosparhq.cnes.fr/assets/uploads/2022/05/Outstanding-Paper-Award-Recipient-List\\_2022\\_Table\\_Web.pdf](https://cosparhq.cnes.fr/assets/uploads/2022/05/Outstanding-Paper-Award-Recipient-List_2022_Table_Web.pdf)

### COSPAR Space Science Award

James W. Head, III



#### **Minor Planet (10110) Jameshead**

James W. Head III is Distinguished Professor in the Department of Earth, Environmental and Planetary Sciences at Brown University. From 1968 to 1972, he participated in the selection of landing sites for the Apollo program, in training Astronaut crews in geology and surface exploration, in planning and evaluating the package of experiments to be deployed on the Moon, in mission operations in Houston during lunar surface exploration, and in preliminary analysis of the lunar samples returned by the Astronauts. Professor Head's research centers on the study of geological processes that form and modify the surfaces, crusts and lithospheres of planets, how these processes vary with time, and how such processes interact to produce the historical geological record preserved on the planets. He was Co-investigator of Soviet Venera 15/16 and Phobos, Russian Mars 1996, Luna and PSRM and the US Magellan (Venus), Galileo (Jupiter), Mars Global Surveyor, Moon Mineralogy Mapper experiment on the Chandrayaan-1, MESSENGER (Mercury), GRAIL (Moon) and Space Shuttle missions, the laser altimeter experiment (LOLA) on Lunar Reconnaissance Orbiter, and the ESA Mars Express mission. He has published over 700 papers in professional journals, with H index 132. He has been principal advisor to over 55 Master's Degree recipients and over 45 PhD recipients. He has had responsibilities in numerous committees, editorial boards and community services. For these achievements, he clearly deserves the prestigious COSPAR Space Science award.

### COSPAR Space Science Award

Alan Title



#### **Minor Planet (10113) Alantitle**

Dr. Alan Title has been involved in space solar physics since the end of the sixties, being Co-Investigator of the Halpha telescope of Skylab 2. He has been Principal Investigator (PI) on major missions such as TRACE, HINODE, the UV imager AIA on the Solar Dynamics Observatory (SDO) and the IRIS S/C launched in June 2013. He has also been Co-Investigator of various other space missions. He participated in scientific breakthroughs in various domains: flux tubes in the convection zone, granulation, sunspot penumbrae (with an explanation of the Evershed effect) and characterization of the "magnetic carpet" as evidence of emergence of magnetic flux. Since 2010 AIA/SDO has kept a continuous eye on the Sun and since its launch, the UV spectrograph IRIS has resulted in the publication of more than 300 papers, clear evidence of the major contribution of Dr. Title to the entire solar community for which he also promoted



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a policy of open access to data. Dr. Title contributed to the development of optical hardware for space instruments and is the owner of 3 patents. He has been member of more than 55 various committees for about 40 years and is member of various societies. He has received about 25 awards and honors, including the NASA Exceptional Scientific Achievement Medal in 2007, and is a member of both the National Academy of Science and the Academy of Engineering. He also has been heavily involved in popularizing space solar science through various initiatives and is the author of more than 600 papers (220 scientific articles in refereed journals).

### **COSPAR International Cooperation Medal**

WU Ji



### **IAU Minor Planet (10118) Jiwu**

Professor WU Ji is a well-known space scientist and an active practitioner of international cooperation in space research. As an ardent advocator for international cooperation, he has been playing an active and pioneering role in promoting international cooperation in space science at all levels. He has played a key role in the Double Star Program (DSP), a China-ESA joint mission, Yinghuo-1 a cooperation mission onboard Phobos-Grunt, as well as providing flight opportunities on new series of Chinese science satellites, such as Dark Matter Particle Explorer (DAMPE), Shjian-10, Einstein Probe, etc. He is one of the initiators of the CAS-NAS Forum for New Leaders in Space Science, the CAS-ESA bilateral meeting and joint mission mechanism, and the International Space Science Institute in Beijing. He was the key organizer of the very successful COSPAR Scientific Assembly held in Beijing in 2006, and he continues to contribute greatly to international cooperation in space research, making him a worthy recipient of COSPAR's International Cooperation Medal in 2022.

### **COSPAR William Nordberg Medal**

Gerda Horneck



### **IAU Minor Planet (10133) Gerdahorneck**

Dr. Gerda Horneck is a pioneer in Radiation Biology and Astrobiology. After receiving her doctorate from the University of Frankfurt in Microbiology in 1967, she founded in Germany the new and unknown field of Astrobiology, first by leading the working group on Space Biophysics at the University of Frankfurt, then by becoming the leader of the Exobiology group at the Institute of Aerospace Medicine of the German Aerospace Center (DLR). She later became the head of the DLR department of Radiation Biology as well as the Deputy Director of the Institute of Aerospace Medicine.

Gerda Horneck's entire scientific career was dedicated to space research, in particular life in extreme environments and life under radiation and space conditions. She was initiator, designer, participant, Co- and Principal Investigator of numerous space experiments. She started as Principal Investigator in 1983 of "Microorganisms in Space" on Spacelab 1, one of the first astrobiological space experiments performed in Earth orbit. She was PI for many following



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experiments, too numerous to list here. Through these experiments important knowledge was gained on the survival of bacterial spores in space and on cellular repair of radiation damage in space as well as its efficiency and kinetics. This was the basis for developing a chain of further experiments in space which enlightened the likelihood of interplanetary transfer of life (the so-called Lithopanspermia) and the habitability of Mars up to stability of organics in space and its relation to the origins of life. Gerda Horneck was and is member, founder, president, chair of many committees, societies and associations, including in COSPAR where she served in a multitude of functions. She also received honorable awards from ESA, NASA, DLR, and ISSOL. Because of her important achievements in space microbiology a new bacterial strain was named *Bacillus horneckiae* sp. nov in her honor. In various leadership roles Gerda guided scientific pursuits that advanced the careers of numerous biologists, astrobiologists and planetary scientists. Her extraordinary achievements, national and international, make Gerda Horneck a well-deserving recipient of the Nordberg Medal.

### **COSPAR William Nordberg Medal**

Joyce E. Penner



### **IAU Minor Planet (10134) Joycepenner**

Professor Joyce Penner is selected for the COSPAR Nordberg Medal for her pioneering contribution and scientific leadership in identifying the diversity of atmospheric aerosols associated with human activities and how they drive climate change. It would be difficult to find anyone working on the aerosol-climate connection who has not been influenced by Professor Penner's discoveries or who has not utilized the assessments she led. Her early works have motivated spaceborne observations of aerosols for decades. She has inspired and promoted generations of women in climate science, at Lawrence Livermore National Lab, University of Michigan, and beyond her workplace. Over her career, Professor Penner has built up our scientific knowledge of chemistry and physics of aerosols in the global atmosphere. She has been most innovative in sustained research that demonstrates the full extent of aerosols' impact on the atmosphere, their relationship to human activities, and their complex interactions with the climate system. Professor Penner is among the first group of scholars who combined model and satellite observations to elucidate the complicated role of aerosols in our climate system. By delivering assessable comparisons of the contrasting roles of aerosols and greenhouse gases in climate, she has enabled our attribution of the current climate change to human origins.

### **COSPAR Harrie Massey Award**

Pascale Ehrenfreund



### **IAU Minor Planet (9826) Ehrenfreund**

Pascale Ehrenfreund receives the Massey Award in recognition of her outstanding contributions to the development of space research and her leadership in space science and policy. Professor Ehrenfreund is currently the President of the International Astronautical Federation and Research Professor at the Space Policy Institute of George Washington University in the US. Coming from a strong science background in astrophysics and biology, she has contributed to astrospace missions as Principal Investigator, Co-Investigator, Project Scientist, and Team leader for ESA and NASA planetary and astronomy missions and conducted experiments in low Earth orbit and on the International Space Station. Her expertise and vision have been fundamental to the successful work of various boards and governing entities with



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which she has been associated, including the US Space Studies Board, where she served on the steering group for the Decadal Survey in Planetary Science and on the Committee on Human Spaceflight, the FP7 Space Advisory Group, and the Horizon2020 Space Advisory Group of the European Commission. She was chair of COSPAR's Panel on Exploration between 2010-2019, and more recently President of the Austrian Science Fund. Between 2015-2020 she served as the Chair of the Executive Board of the German Aerospace Center and currently advises the European Commission. Through these opportunities and in leadership positions elsewhere in the space sector, it is clear that Professor Ehrenfreund has made outstanding contributions to the development of space research.

### **COSPAR Distinguished Service Medal**

Willem Hermsen



### **IAU Minor Planet (10135) Wimhermsen**

Our scientific communities very much rely on voluntary support and unselfish service by their members. Wim Hermsen is the example par excellence of such a community member. Wim, an internationally leading high-energy astrophysicist, has combined his impressive scientific career and management duties in the Dutch Space Research Organization SRON with long lasting service to COSPAR since 1988: as the Dutch National representative, organizer of the 1990 Scientific Assembly in The Hague, member of the Bureau, Vice President of COSPAR, Chair of COSPAR's Finance Committee, and Chair of the COSPAR Nominations Committee. This list could easily be extended.

All these activities Wim carried out in a very diplomatic and very efficient manner, based on a most impressive feeling for the needs of COSPAR and its members. Wim Hermsen, a former member of the Dutch Men's Water Polo Team at the 1972 Summer Olympics in Munich, is a real team player. Fair play, sporting initiative and dedication to his COSPAR team characterize Professor Wim Hermsen's most productive contributions to COSPAR during the past thirty years. He is a most outstanding recipient of the COSPAR Distinguished Service Medal!

Thank you Wim! Your entire COSPAR Team.

### **Joint COSPAR / Indian Space Research Organisation (ISRO) Vikram Sarabhai Medal**

*for outstanding contributions to space research in developing countries*

Christine Amory-Mazaudier



Dr Christine Amory-Mazaudier is an expert in the field of solar-terrestrial interactions with an emphasis on the solar effects on ionospheric current systems. She is extremely passionate about capacity building wherein she has trained several students of under-privileged background in several nations in Africa and played a pivotal role in the installation of network of instruments in African countries over the past three decades.

Dr. Amory-Mazaudier made important contributions to the understanding of how ionospheric current systems are modified in response to solar flares, prompt penetration of magnetospheric electric fields, and meridional circulation of neutral winds during geomagnetic storms. She also founded the GIRGEA (International



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Geophysical Research Group Europe Africa) with an aim to develop space physics education and research in developing countries in Africa and Asia.

Dr. Amory-Mazaudier has received several international recognitions for her exemplary contributions of capacity building, which include Certificates of Merit for the work done in Africa under the International Heliophysical Year (IHY) by the American Geophysical Union (AGU), the International Union of Geodesy and Geomagnetism (IUGG) and IHY-Africa (in 2007), Fellowship of the African Geophysical Society and Marcel Nicolet Medal by the European Space Weather community (in 2015), Campaign Medal by the Academy of Science of Vietnam (in 2017), and Certificate of Appreciation by Nepal Physical Society (in 2022).

Dr. Amory-Mazaudier has authored or co-authored over 140 peer refereed articles. COSPAR and the Indian Space Research Organization are truly honoured to award the Vikram Sarabhai Medal 2022 to Dr. Christine Amory-Mazaudier of France for her outstanding contributions to the understanding of space weather effects on the ionosphere and capacity building in Africa.

### **Outstanding Paper Award for Young Scientists 2022**

[https://cosparhq.cnes.fr/assets/uploads/2022/05/Outstanding-Paper-Award-Recipient-List\\_2022\\_Table\\_Web.pdf](https://cosparhq.cnes.fr/assets/uploads/2022/05/Outstanding-Paper-Award-Recipient-List_2022_Table_Web.pdf)

### **COSPAR TODAY**

The Committee on Space Research (COSPAR) has both National Scientific Institutions and International Scientific Unions as members. Moreover, approximately 11,000 scientists actively engaged in space research are COSPAR Associates. Companies and organizations interested in supporting COSPAR activities may also become 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 journals *Advances in Space Research (ASR)* and *Life Sciences in Space Research (LSSR)*,
- strives to promote the use of space science for the benefit of all 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 Symposia and Colloquia,
- 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,
- commissions and prepares comprehensive scientific roadmaps on important topics to allow space agencies and other entities to base decisions affecting their programs and future research on the best available science,
- 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.



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The International Science Council (ISC) established COSPAR during a 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.

Complete lists of previous award recipients may be found at:

<https://cosparhq.cnes.fr/awards>


Further information on COSPAR is available at:

<https://cosparhq.cnes.fr/>

or from the Secretariat:

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