



COSPAR UPDATE

Dr Jean-Louis Fellous

**Executive Director
COSPAR Secretariat
Montpellier, France**

ESSC-57, Amsterdam, 9-10 May 2019



SC		Chair
A	Space Studies of the Earth's Surface, Meteorology and Climate	R. Kahn (USA)
B	Space Studies of the Earth-Moon System, Planets, and Small Bodies of the Solar System	O.I. Korablev (Russia)
C	Space Studies of the Upper Atmospheres of the Earth and Planets Including Reference Atmospheres	T. Nakamura (Japan)
D	Space Plasmas in the Solar System, Including Planetary Magnetospheres	K. Scherer (Germany)
E	Research in Astrophysics from Space	P. Ubertini (Italy)
F	Life Sciences as Related to Space	T. Hei (USA)
G	Materials Sciences in Space	M. Avila (Germany)
H	Fundamental Physics in Space	C. Lammerzahl (Germany)

COSPAR SCIENTIFIC COMMISSIONS



PANEL	Chair
Technical Panel on Satellite Dynamics (PSD)	H. Peter (Germany)
Panel on Technical Problems Related to Scientific Ballooning (PSB)	T. Yoshida (Japan)
Panel on Potentially Environmentally Detrimental Activities in Space (PEDAS)	C. Frueh (USA)
Panel on Radiation Belt Environment Modelling (PRBEM)	P. O'Brien (USA)
Panel on Space Weather (PSW)	M. Kuznetsova (USA)
Panel on Planetary Protection (PPP)	A. Coustenis (France)
Panel on Capacity Building (PCB) Sub-panel: Capacity Building Fellowship Program and Alumni	C. Gabriel (Spain) M. Mendez (The Netherlands)
Panel on Education (PE)	M. Boer (France)
Panel on Exploration (PEX)	F. Westall (France)
Panel on Interstellar Research (PIR)	R. McNutt (USA)

Red denotes female Chairperson

COSPAR TECHNICAL PANELS



- **The Bureau is composed of nine members, elected for 4 years (renewable once)**
 - **L. A. Fisk (USA), President (second term)**
 - **Karl-Heinz Glassmeier (Germany) and Mikhail Panasyuk (Russia), Vice-Presidents (first term)**
 - **Catherine Césarsky (France) (second term)**
 - **Manuel Grande (UK)**
 - **Masaki Fujimoto (Japan)**
 - **Charles Kennel (USA)**
 - **Pietro Ubertini (Italy)**
 - **Chi Wang (China)**



BUREAU MEMBERS AS OF 22 JULY 2018

42ND COSPAR SCIENTIFIC ASSEMBLY



**Held in Pasadena, California,
USA, 14-22 July 2018**

**The Pasadena Assembly
featured the record Assembly
attendance since 2010**





	2010 Bremen	2012 Mysore	2014 Moscow	2018 Pasadena
Regular Participants	2417	1620	2047	2310
Students	586	346	121	419
Exhibitors	167	85	58	58
Press	76	78	123	20
Sponsors	?	?	?	55
Accompanying persons	104	113	64	40
LOC, VIPs, guests, staff, etc.	1000	1000	?	316

ATTENDANCE TO RECENT COSPAR SCIENTIFIC ASSEMBLIES

ESSC-57, Amsterdam, 9-10 May 2019



- **Topic: “Small Satellites for Sustainable Science and Development”**
- **Call for Papers published in the December issue of SRT & Symposium Web site www.cospar2019.org**



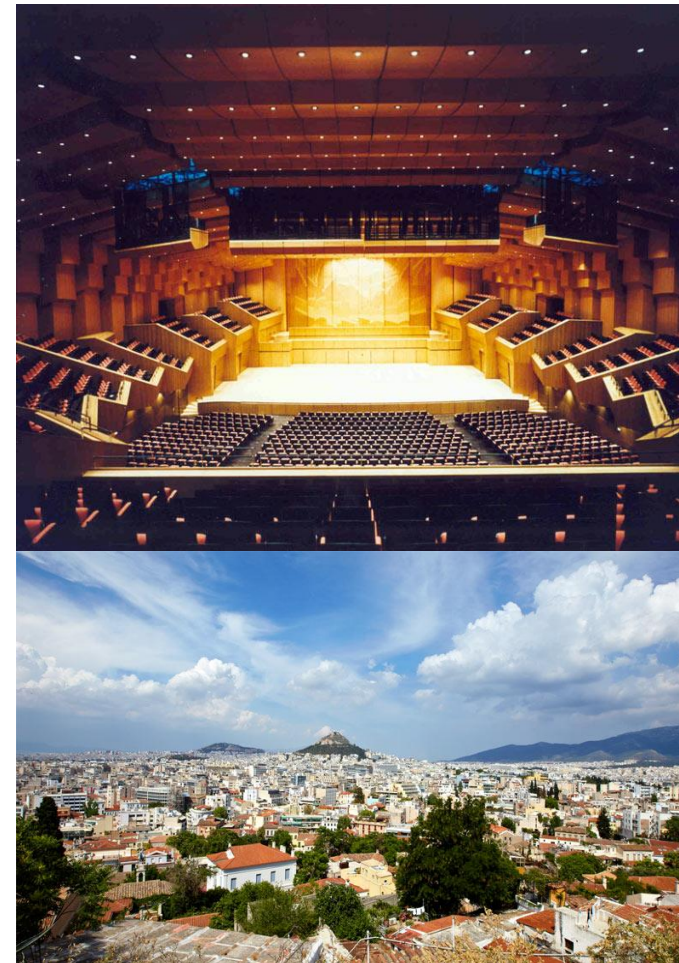
COSPAR 4TH SYMPOSIUM 4-8 NOVEMBER 2019, HERZLIYA, ISRAEL

- **Save the dates: 15-23 August 2020**
- **National Science Week in Australia**
- **Prof. Iver Cairns chairs the Scientific Program Committee**



THE 43RD SCIENTIFIC ASSEMBLY WILL BE HELD IN SYDNEY (AUSTRALIA) IN 2020

- Athens (Greece) will host the 44th COSPAR Assembly in July 2022 for the first time ever



44TH COSPAR ASSEMBLY (2022)



- **Purpose**
 - To chart the future of COSPAR in the evolving environment
- **Two main issues**
 - A pragmatic one: how do we achieve financial sustainability, which are current financial plan does not provide?
 - An inspirational one: how do we increase the influence and impact of COSPAR so that the goals of our constituency, the international space research community, are well served?
- **Participants**
 - The current leadership of COSPAR, some past leaders, some friendly advisors who can bring important outside perspectives.
- ... More at ESSC-57!

COSPAR STRATEGIC SEMINAR CARNON, FRANCE, 3-4 DECEMBER 2018



Bureau members + Finance Com. Chair	Past CSAC members	Past COSPAR Officers	Journal Editors	Friendly Experts	Selected SC/P Officers
Fisk Glassmeier Panasyuk Cesarsky (Fujimoto) Grande (r) Kennel Ubertini (Wang) + Cairns	(Wu) (Ryan) Zelenyi	Hermesen Bonnet (Mendez) Saint-Maurice	Harrison (Willis) (Shea)	(Elachi) Green (McBean) (Di Pippo) Hedman Worms (Arnould) Prince (von Steiger) Schildknecht Spini Smith (Gimenez)	Viso Coustenis Opgenoorth (Gabriel) (Nakamura)
Secretariat	Fellous	Janofsky	Fergus	(Haddaji)	

STRATEGIC SEMINAR PARTICIPANTS



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ESSC-57, Amsterdam, 9-10 May 2019



- **A Strategic Action Plan has been derived, based on discussions and recommendations of the Seminar.**
 - **The purpose of the Strategic Action Plan is to direct a series of actions by the leaders and volunteers of COSPAR that will in fact and in perception establish COSPAR's unique importance for each of its constituents and stakeholders.**
 - **The actions also recognize that in certain cases there are opportunities for increased income, which will enable a sustainable financial future for COSPAR.**

FROM THE STRATEGIC SEMINAR TO THE ACTION PLAN



- COSPAR promotes scientific research in space at an international level, with emphasis on the exchange of results, information, and opinions, and provides a forum, open to all scientists.
- COSPAR endeavors to ensure that a vibrant international space research effort can be conducted without impediment from geopolitical tensions or differences.
- COSPAR requires that presentations at its meetings and publications in its journals are the result of scientific research that was conducted with the highest ethical standards.
- COSPAR discloses any financial support that might be perceived as influencing its activities or positions it might advocate.
- COSPAR promotes diversity and gender equality in all of its activities, and does not tolerate any form of discrimination or harassment.
- COSPAR encourages meaningful roles in all activities for younger scientists, who are the future of international space research.

STATEMENT OF PRINCIPLES



- **The biennial Scientific Assemblies are COSPAR's most important activity.**
 - **Every effort will be made to improve the Scientific Assemblies and use the opportunities they afford to pursue the goals of COSPAR, as documented in the Statement of Principles, to increase diversity, gender equality, and encourage younger Associates.**
 - **Data on age, gender, geographic origin, etc., of the attendees at future Assemblies and Symposia should be systematically collected to validate these improvements.**

ENHANCING THE VALUE OF SCIENTIFIC ASSEMBLIES



- Have more panel debates and plenary talks.
- Provide ample opportunities for networking.
- Have attractive poster sessions, properly linked with and promoted in the corresponding session with oral talks, and with amenities that promote participation.
- A particular effort should be devoted to ensure that Scientific Commissions' and Panels' business meetings are properly advertised, and are held in an attractive venue and feature interesting discussions.
- Consider a lower registration fee for retired Associates, and for teachers.

INCREASING THE ATTRACTIVENESS OF SCIENTIFIC ASSEMBLIES



- **Restrict Associates from submitting more than one invited abstract and two contributed abstracts on which the submitter is to be the lead author.**
- **Make every effort to ensure that missing speakers and posters do not disrupt the session programs.**
- **Have ZARM, the LOC, the Program Chair, and Session Conveners coordinate so as to eliminate from the program presentations (talks and posters) for which the authors are not registered and/or attending and iterate the program as required.**
- **Provide electronic communications to ensure up-to-date information on program changes.**
- **The Program Committee should revise the lengths of sessions after abstract submission so that the revised lengths correspond to the actual abstracts received, so as to allocate the program resources (number of rooms and oral slots) more equitably.**
- **The Program Committee should enforce the 15, 20, and 30-minute talk lengths and aim for a 20% poster ratio.**

STREAMLINING THE SCIENTIFIC ASSEMBLY PROGRAM



- Spread the message of gender equality concerns to Conveners of Sessions.
- Encourage Session Conveners (MSOs) to have oral presentations by a more diverse set of Associates, especially female and younger presenters.
- Give Session Conveners feedback on the diversity of their speakers.
- Preferentially offer oral slots for female Associates rather than poster space.
- Improve networking activities. Organizing breakfasts and ad hoc meetings for early career and female attendees.
- Hold a diversity forum or lunch.
- Actively encourage nominations of a diverse group of Associates for COSPAR Awards.

SUPPORTING GENDER EQUALITY



- Organize a job-fair activity during the Assemblies for the benefit of early-career Associates, including job opportunities with Associated Supporters.
- Have a section in the Assembly program for newcomers, focused on first-time attendees, e.g., the organization of an introductory panel at the beginning of Assembly meetings.
- Work with the LOC to identify a Younger Associates/Student Zone within the Assembly Center, featuring an attractive program of meetings with senior scientists, agency and industrial company leaders, etc., which does not overlap with scientific sessions.
- Find ways to organize an evening event dedicated to younger Associates, including Capacity Building Workshops' Alumni, at each Assembly and Symposium.
- Introduce a “mentoring system”, providing a senior guide for younger Associates (including help in abstract writing).
- Encourage oral presentations by younger Associates.
- Find ways for younger Associates to fully engage in the Business meeting of their Scientific Commission(s) and Panel(s).
- Create a Panel on Innovative Solutions to address new technologies for and approaches to scientific research, thereby giving younger COSPAR Associates the opportunity to get proper exposure to their new ideas and approaches.
- Find ways to lower the registration fees for potential post-doctoral participants.
- Offer waivers for the abstract fees discussed next to all young award recipients submitting abstracts.

SUPPORTING YOUNGER ASSOCIATES



- There are two COSPAR scientific publications: *Advances in Space Research (ASR)* and *Life Science in Space Research (LSSR)*.
 - *ASR* and *LSSR* are doing well as journals, with increasing impact factors, and the actions going forward should be to achieve greater importance for these journals, while adjusting if need be to ongoing changes in the publishing industry.
 - A serious concern is the evolution of the publishing industry toward more Open Access journals, in their attempt to respond to pressures from national funding agencies.

IMPROVING COSPAR SCIENTIFIC PUBLICATIONS



- Elsevier has made an offer to publish two books a year. The Publications Committee should examine this offer and determine what topics would be suitable for a COSPAR book.
- There are other organizations (e.g., ISSI) that publish books, and it is important that a COSPAR book is both appropriate for COSPAR and distinguishable from the books of other organizations.

INITIATING A COSPAR BOOK SERIES?



- One of the obvious ways that COSPAR can communicate with COSPAR Associates, or for that matter the broader international scientific community, is through *Space Research Today (SRT)*.
- However, *SRT* is published only three times annually and distributed (free for Associates only) in hard copy by mail, rendering it ineffective in providing timely information or creating a coherent, well-informed COSPAR community.

COMMUNICATIONS, INFLUENCE, AND ENGAGEMENT



- **COSPAR will initiate an electronic version of *SRT*, *eSRT*, which appears monthly and is distributed by email to all COSPAR Associates and anyone else that requests it.**
 - **The triannual hard copy version of *SRT* should continue, and include more in-depth articles on research topics, perhaps Special Issues on Roadmaps, or other COSPAR reports.**

ACTIONS TO IMPROVE COSPAR COMMUNICATION



- **Initiate a Panel on the Social Sciences and Humanities, covering such topics as space policy, history, law, ethics, economics, etc.**
 - **Initiate a dialogue through the ISC between the Panel and relevant Scientific Unions as well as the UN to develop the agenda for the Panel.**
 - **Have the Panel propose lectures and other events at Scientific Assemblies that will educate and inform decision makers, starting with COSPAR-2020 in Sydney.**

ACTIONS TO IMPROVE COSPAR'S MULTIFACETED ENGAGEMENT



- The COSPAR Charter allows “to recognize as COSPAR Associated Supporters public or private organizations wishing to support the Committee’s activities”.
- The approach of COSPAR to its Associated Supporters from industry has basically been one of appealing to altruism; provide support for COSPAR’S noble cause. Yet companies are not altruistic entities. Rather, the case needs to be made that the Associate Supporter dues are an investment by the corporate sector in the application of scientific discovery to real world challenges and opportunities, which are in their business interests.

COSPAR ASSOCIATED SUPPORTERS



- The COSPAR Associated Supporter program will be reconstituted to encourage strategic engagement with science-based global industry, and to recognize and obtain meaningful support from those industries that benefit from this engagement.
 - Two new Supporter categories will be added: Industry Partner, which is the highest level, and Industry Supporter, with associated significant benefits (logos, complimentary registrations, enhanced participation in COSPAR activities, etc.).
 - A Panel on Innovative Solutions should be established that addresses new technologies for and approaches to scientific research. Such a Panel on Innovative Solutions should be of particular interest to the Associated Supporters from industry and should also be of considerable interest to younger COSPAR Associates.

ACTIONS TO RECONSTITUTE THE ASSOCIATED SUPPORTER PROGRAM



➤ Planetary Protection

- The COSPAR Panel on Planetary Protection (PPP) was reconstituted in 2018 and now includes a Vice Chair appointed by UNOOSA.

➤ Space Weather

- The COSPAR/ILWS Scientific Roadmap, “*Understanding Space Weather to Shield Society*”, offers a rich scientific basis to guide efforts to properly forecast and mitigate the impacts of space weather phenomena. The Roadmap should be regularly updated, e.g., every 5 years, to recognize scientific progress and identify future needs.

➤ Space Debris

- Space debris, and more generally the topic of the sustainability of outer space activities, is a growing concern and became one of the prime topics in COPUOS during recent years. There are initiatives to establish a new COPUOS Working Group dealing with these subjects, in which COSPAR has a natural role to play in becoming the scientific authority orchestrating relevant research. The COSPAR Panel on Potentially Environmentally Detrimental Activities in Space (PEDAS) will be restructured, including the possibility for COSPAR to create a parallel working group to COPUOS for space debris issues.

SPECIFIC JOINT ACTIVITIES OF COSPAR AND UNOOSA IN SUPPORT OF COPUOS



- **COSPAR Support for Space Programs in Development**
 - COSPAR is the only international scientific organization that considers as its mandate to encourage and where possible enable developing space programs to reach their full potential.
 - Besides its Roadmaps and Symposia, the single most important activity that COSPAR undertakes in support of developing space programs are the Capacity Building Workshops and Capacity Building Fellowship program that are intended to develop a worldwide community of capable space researchers and spread the benefits of space research to all nations.
 - More than 30 Capacity Building Workshops have been organized in the past 18 years, in which about 1,000 Alumni have participated. A serious effort will be devoted to set up an Alumni network in order to track the career trajectories of the Workshop attendees, as a manifestation of one of COSPAR's most important efforts to train and empower the next generation of space scientists worldwide.

IMPROVING COSPAR SUPPORT TO DEVELOPING SPACE PROGRAMS



- **COSPAR should explore the possibility of assembling an international consortium that will develop, launch, and acquire data from a constellation of small satellites.**
 - **Participation in the consortium would be voluntary;**
 - **The small satellites with instruments would need to be provided by Member nations;**
 - **There will need to be a major space agency(s) that facilitates launches and data collection;**
 - **The constellation should yield useful and important data, e.g., the plasma conditions in the ionosphere, with sufficient measurement density to substantially improve space weather forecasts.**

A POSSIBLE NEW BOLD INITIATIVE



- **The Strategic Action Plan specifies the actions that COSPAR will take to return to prominence during the next three years.**
 - **The success of the financial plan is straightforward to measure: COSPAR is or is not financially sustainable at the end of three years.**
 - **The success of the plan to establish for each constituent and stakeholder the unique importance of COSPAR will be subject to more subjective measures. For example, the Plan will be considered a success if the Members are increasingly satisfied with the value that COSPAR provides in return for their membership dues; the Assemblies are increasingly important for the careers of COSPAR Associates, particularly the younger Associates; the journals are valued with increased impact factors; etc.**

MEASURES OF SUCCESS



- The Strategic Action Plan was unanimously approved (and is now being implemented)
- An administrative fee will apply for each abstract submitted to COSPAR 2020 Assembly
- The five recommendations from the PPP meeting on January 23-25 re: the MMX mission, Outer Solar System and rewriting of the PP Policy were unanimously approved, as well as slightly amended PPP Terms of reference and composition
- The COSPAR Awards Committee composition has been updated, with three new female members, including Ester Antonucci as new Committee Chair
- COSPAR Bylaws will be updated to account for new directions.

A FEW HIGHLIGHTS FROM THE 89TH BUREAU MEETING (20-21 MARCH 2019)



- Visit the renewed COSPAR Web site
- cosparhq.cnes.fr

THANK YOU FOR YOUR ATTENTION!

THE COSPAR PANEL ON PLANETARY PROTECTION – PPP TERMS OF REFERENCE AND MEMBERSHIP



Jean-Louis Fellous
Executive Director

COSPAR Secretariat
Montpellier, France



- ▶ Management procedures were proposed by the incoming President Len Fisk (elected August 2014) and approved at the **83rd Bureau meeting** on March 26, 2015
- ▶ In particular, COSPAR management procedures describe a regular, continuing Review Process of Scientific Commissions and Panels

COSPAR MANAGEMENT PROCEDURES



- ▶ At its **84th meeting** (March 24, 2016), the Bureau approved the following decision:
 - ▶ *“The Bureau unanimously decides to task a Special Review Committee chaired by President Fisk and including Vice-President Wu and Bureau member Glassmeier to review the Terms of Reference of the Panel on Planetary Protection (PPP) with a view to raise the stature and visibility of the PPP, and produce a formal process for setting policy.”*

REVIEW OF THE PANEL ON PLANETARY PROTECTION



- ▶ Updated Terms of Reference for the Panel on Planetary Protection were unanimously approved by **the 86th Bureau meeting** (March 22, 2017)

- ▶ The updated ToRs included four sections:
 1. Scope and Objectives of the Panel on Planetary Protection
 2. Panel Membership
 3. Panel Operations
 4. Panel Reporting

PANEL ON PLANETARY PROTECTION – UPDATED TERMS OF REFERENCE



- ▶ In the fall of 2017, space agencies involved in planetary exploration were invited to appoint representatives.
- ▶ At its March 2018 87th meeting, **the Bureau unanimously approved the composition of the restructured PPP:**
 - ▶ Chair: Athena Coustenis, Observatoire de Paris
 - ▶ Vice Chairs: Gerhard Kminek of ESA and Niklas Hedman of the UN Office of Outer Space Affairs
 - ▶ Six agency representatives for whom nominations were received. ISRO and NASA were sent reminders.
 - ▶ Eight scientists to be designated by the SC B and SC F Chairs.
- ▶ In the spring of 2018, Chairs of Scientific Commissions B and F were requested to nominate experts from their community to complete the appointed members of the reconstituted PPP.
- ▶ **The 88th Bureau meeting** held on July 21, 2018 in Pasadena formally approved the completed composition of the Panel.

NEXT STEPS IN THE RESTRUCTURING OF THE PPP



- ▶ Chair: Dr. Athena Coustenis
- ▶ Vice-Chairs: Niklas Hedman (UNOOSA) and Gerhard Kminek (Past PPP Chair, ESA)
- ▶ Eight members appointed by space agencies:

China/CNSA	Prof. Lei Li
France/CNES	Dr. Michel Viso
Germany/DLR	Dr. Petra Rettberg
India/ISRO	Dr. P. Sreekumar
Italy/ASI	Dr. Eleonora Ammannito
Japan/JAXA-ISAS	Dr. Saku Tsuneta
Russia/IKI	Dr. Elena Deshevaya
USA/NASA	Dr. James Green

- ▶ Eight scientists representing SC B and SC F

Olivier Grasset (France, SC B)	Alex Hayes (USA, SC B)
Maria-Paz Zorzano (Sweden/Spain, SC B)	Maxim Zaitsev (Russia, SC B, TBC)
Olga Prieto-Ballesteros (Spain, SC B)	A. Nakamura (Japan, SC B&F, TBC)
François Raulin (France, SC F)	P. Doran (USA, SC B)

MEMBERSHIP OF THE PANEL ON PLANETARY PROTECTION (AS OF JULY 2018)



- ▶ The first “official meeting” of the restructured Panel held in Vienna on 23-25 January 2019 featured:
 - ▶ **An open session**, attended by the Panel members, by a number of other experts from interested parties, e.g., the European Science Foundation, US National Academy of Sciences, JAXA, the Open University, industry (ThalesAleniaSpace, Fluid Gravity Engineering), and by several individual scientists;
 - ▶ **A closed session**, only attended by the Panel members as defined by the ToRs and approved by the Bureau, entitled to participate in forming the consensus of the PPP with regard to recommendations for revisions and updates of the Planetary Protection Policy.

THE FIRST PANEL MEETING



- ▶ **The 89th Bureau meeting** in Paris on 20-21 March 2019 unanimously approved slightly updated PPP Terms of Reference, amended to specify that **the Panel consists of an equal number of appointed members representing space agencies and of representatives of COSPAR Scientific Commissions B and F.**
- ▶ The Bureau further requested the Secretariat, working with the UK National Representative and the Chair of Scientific Commission F, to identify two additional Panel members, namely a representative endorsed by the UK Space Agency and a biologist from Scientific Commission F.

FURTHER DEVELOPMENTS