



COSPAR Update

Dr Jean-Louis Fellous
Executive Director



COSPAR, a platform for international cooperation in space

- The Committee on Space Research (COSPAR) was established by the International Council for Science (ICSU*) in 1958
- From its inception COSPAR's primary goal was to *"provide the world scientific community with the means whereby it may exploit the possibilities of satellites and space probes of all kinds for scientific purposes, and exchange the resulting data on a cooperative basis."*

** Now the International science Council (ISC) after ICSU merging with the ISSC (International Social Sciences Council)*



COSPAR membership

- **45 countries and 13 International Scientific Institutions**
 - *Last new member: Saudi Arabia. Pending new member: UAE*
- **21 European countries members of COSPAR**
- **Comparison with ESA's membership**
 - *Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal*, Romania, Spain, Sweden, Switzerland and the United Kingdom.*
 - *Bulgaria*, Cyprus, Malta, Latvia, Lithuania, Slovakia and Slovenia have cooperation agreements with ESA.*
 - *Canada takes part in some projects under a Cooperation agreement.*

* Countries which recently resigned from COSPAR for lack of academic funding



COSPAR Scientific Structure

- **Eight Scientific Commissions**
 - *Covering all fields of space research (Earth, planets, ionosphere, magnetosphere and heliosphere, astrophysics, life and material sciences, fundamental physics)*
- **Ten technical Panels on a variety of topics**
 - *From planetary exploration and planetary protection to space weather, scientific ballooning, satellite dynamics, radiation belts, and capacity building (with a Fellowship sub-Panel)*
- **COSPAR also hosts a number of specialized working groups, including a “Working Group on GEO” (of which the Committee is a Participating Organization)**



COSPAR Scientific Commissions

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. Lammerzahn (Germany)



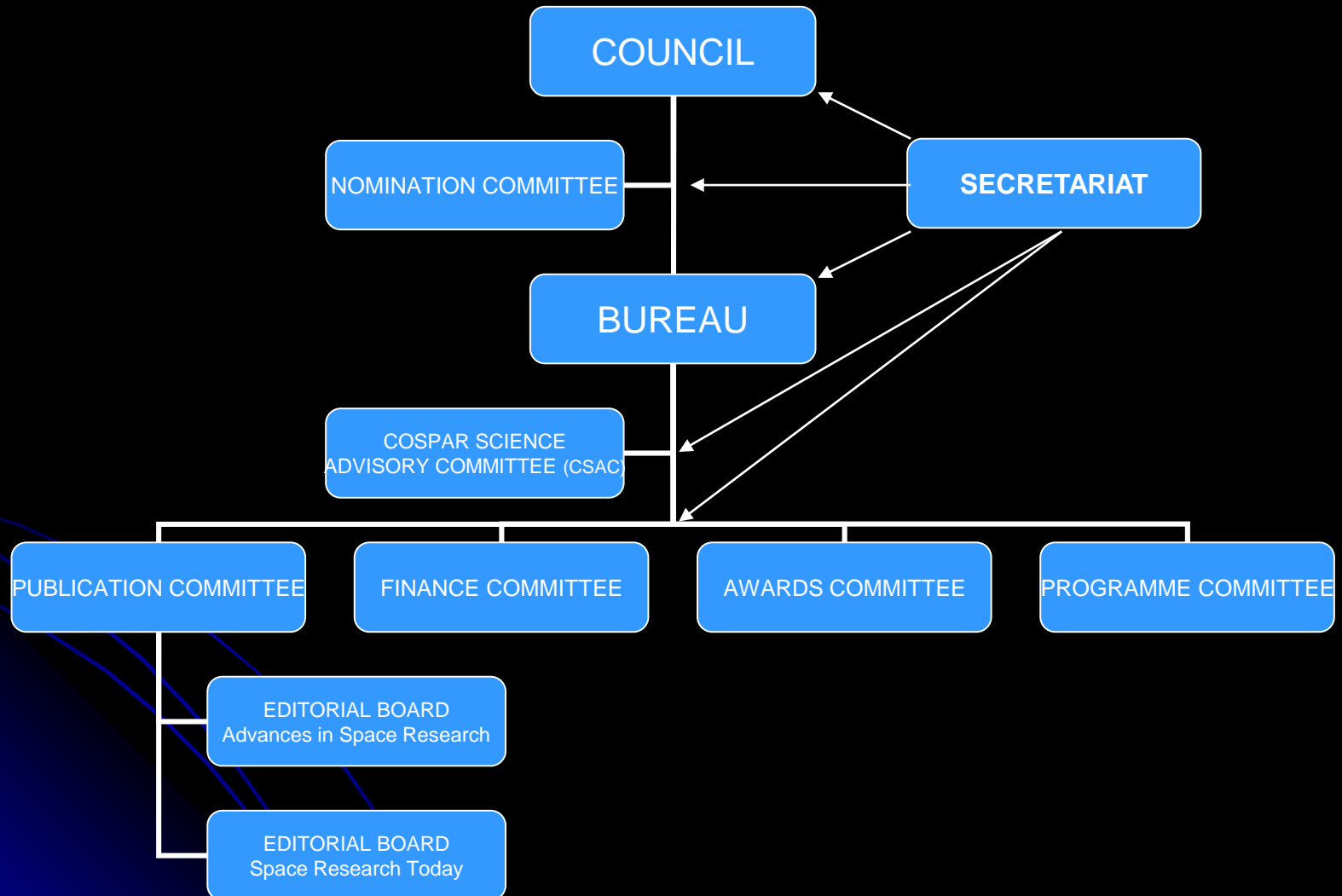
COSPAR Technical Panels

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 (PCB FPA)	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 Governance





Bureau composition as of 22 July 2018



Professor Lennard A. Fisk is a renowned scientist in the field of solar and heliospheric physics and a former NASA Associate Administrator and Chief Scientist

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



COSPAR activities

- COSPAR is well known in the space research community for its role in promoting international cooperation and disseminating research results through
 - *Scientific Assemblies*
 - *Colloquia and workshops*
 - *Capacity building and fellowship programs*
 - *Publications*



42nd Scientific Assembly

- The 42nd COSPAR Scientific Assembly was held in Pasadena, California, USA, 14-22 July 2018
 - *The Scientific Program Committee was chaired by Dr. Thomas Prince (Caltech)*
 - *The Pasadena Assembly featured a record Assembly attendance since 2010*





Attendance to recent COSPAR Scientific Assemblies

	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



The 43rd Scientific Assembly will be held in Sydney (Australia) in 2020



- The selected Australian bid was competing with Prague, Shanghai and Lausanne
- The 86th Bureau meeting opted in March for the period **15-23 August 2020**, which coincides with the National Science Week in Australia
- A site visit in January showed off the excellence of the venue and of the LOC led by Russell Boyce from the UNSW
- Prof. Iver Cairns will chair the Scientific Program Committee



44th COSPAR Assembly (2022)

- The selection of the 44th Assembly site occurred in Pasadena
 - *With 2018 Assembly in the Americas (USA) and 2020 Assembly in Asia (Australia), it was due to be held in Europe*
- Bids had been received from the Czech Republic (Prague), Switzerland (Lausanne), Poland (Warsaw) and Greece (Athens).
- The Council voted in favor of Athens (Greece), a city which never hosted a COSPAR Assembly before



Publications

- **Advances in Space Research**
 - *The 2017 Impact Factor is **1.529**, up from 1.238 in 2013 and at its highest ever*
- **Life Sciences in Space Research**
 - *First appeared in April 2014*
 - *Already referenced in PubMed*
 - *2017 Cite Score: **1.86***
- **Space Research Today**
 - *Freely distributed to 10,000 COSPAR Associates*
 - *Might become fully electronic and OpenAccess*





COSPAR 3rd Symposium 2017

- South Korea through KASI hosted the 3rd COSPAR Symposium
 - *It was supported by the National Committee, the Ministry of Science, ICT and Future Planning and the Governor of the Jeju Special Province*
- The theme: “Small Satellites for Space Research” attracted 370 abstract proposals, out of which 347 were accepted
 - *A CB workshop on “Conceptual design for Nano and Micro Satellite Missions” was held in Daejeon in the two preceding weeks*
- The venue was the ICC in Jeju Island, 18-22 September 2017





Fourth COSPAR Symposium in 2019

- The Call for Intent to host the 4th COSPAR Symposium in 2019 was released on 14 November 2017, with a deadline on 15 January 2018
 - *Attempts have again been directed at encouraging South Africa to host the 4th Symposium, which proved unsuccessful*
 - *Only one proposal was received on 15 January from the Israeli National Representative to COSPAR, Prof. Morris Podolak (Tel Aviv University)*
 - *The Bureau unanimously approved the very attractive Israeli proposal, with comments about the need to adjust the Symposium title to better reflect the goals of this class of events*
 - *The proposers came up with the following new title: “Small Satellites for Sustainable Science and Development”*



COSPAR 4th Symposium

4-8 November 2019, Herzliya, Israel

- **Topic: “Small Satellites for Sustainable Science and Development”**
- **Several events have been proposed by various SC and Panel Chairs. The program (subject to adjustment in consideration of abstracts received) will include:**
 - *A.1 Scientific Earth Observation Missions with single or Multiple Small Satellites*
 - *A.2 Sustainable Earth Science Observations from Small Satellites*
 - *A.3 Small Satellites for Measuring High-resolution Cloud Dynamics and Microphysics*
 - *A.4 Scientific Results of the Venus Earth Observation Mission*
 - *A.5 Smallsats for Earth Science and Geo-hazards Mitigation*
 - *B.1 Small Satellites for Planetary Missions*
 - *B.2 Cubesat exploration of the Solar System (TBC)*
 - *D.1 Space Weather Research with Micro- and Nano-satellites*
 - *E.1 New Astrophysical Challenges with Nano- and Micro-satellites*
 - *PCB.1 Education and Capacity Building in Science and Engineering Using Small Satellites*
 - *PRBEM.1 Nanosatellite Missions Dedicated to Radiation Belts Science, Specifications, and Induced Effects Characterization: Lessons Learned and New Concepts*
 - *PE.1 Teacher Training Workshop (TBC)*
- **The Call for Papers will be published in the December issue of SRT and on the Symposium web site <http://www.cospar2019.org/>**



Panel on Planetary Protection

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

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

- **Scientists representing SC B and 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)



Panel on Space Weather

- At the COSPAR-OOSA meeting in Vienna, space weather was among the topics discussed. A recommendation was made to update at regular intervals the corresponding COSPAR roadmap, and to revise the Terms of Reference and composition of the Panel on Space Weather in a similar way as the PPP.
- *PSW new ToRs and membership were approved in Pasadena*
 - Chair: M. Kuznetsova (USA)
 - Vice-Chairs: S. Gadimova (UNOOSA), M. Grande (UK), D. Nandi (India), H. Opgenoorth (Sweden)



Scientific roadmaps initiated in 2013

- Roadmap on “Space Weather”
 - *Understanding space weather to shield society: A global road map for 2015–2025 commissioned by COSPAR and ILWS*
 - *Published in ASR (55, n°12, 15 June 2015)*
- Roadmap on “Integrated Earth System Science”
 - *Observation and Integrated Earth-system Science: a Roadmap for 2016 - 2025*
 - *Published in ASR (57, n°10, 15 May 2016)*



COSPAR Roadmap on Small Satellites for Space Sciences

- **Small Satellites for Space Sciences**
 - ***Co-chairs: Rüdi von Steiger (ISSI) and Robyn Millan (Dartmouth College)***
 - ***Study Group completed***
 - S. Bartalev (IKI, Russia), M. Borgeaud (ESA), S. Campagnola (JPL, USA), J. Castillo-Rogez (JPL, USA), R. Fléron (DTU, Denmark), V. Gass (EPFL, Switzerland), A. Gregorio (INFN, Italy), T. Horbury (Imperial College, UK), K. Kauristie (FMI, Finland), D. Klumpar (U. Montana, USA), B. Lal (IDA, USA), M. McDonald (U. Strathclyde, UK), A. Meir (ISR, Israel), J. Park (KASI, Korea), V.S. Rao (PES U., India), K. Schilling (Wurzburg U., Germany), G. Stephens (JPL, USA), T. Takahashi (JAXA, Japan), A. Title (LM, USA), and J. Wu (CAS, China).
 - ***First meeting on May 23-24, 2017 at ISSI, followed by regular video conferences***
 - ***First draft report at 3rd COSPAR Symposium in September 2017***
 - ***Assignment of writing responsibilities and regular videoconferences***
 - ***Second meeting on April 10-11, 2018 at ISSI***
 - Full draft of all sections achieved
 - ***Quasi-final report at 42nd Scientific Assembly was presented in Pasadena in July***
 - Two abstracts submitted to sessions A0.1 and B0.2
 - Public presentation on Wednesday, 18 July 2018, 13:00-13:45, Room 16 (Ballroom D).
 - ***Report submitted for publication in ASR in August 2018***



COSPAR Scientific Roadmaps (cont'd)

- **Roadmap to Exoplanets**

- *Activities initiated by Pietro Ubertini, working with Giusi Micela (Chair) and Mark Swain (Vice-Chair ad interim serving till Pasadena Assembly)*
 - Update the terms of reference of Sub-Commission E4
 - Involve a congruous number of scientists covering the areas of interest, different expertise, geographical areas, age, gender
 - Dissemination of the initiative and time plan toward the reference community, implemented by the SCE Chair, and Sub-Commission E4 Chair and Vice-Chair
 - Prepare an outline of the work focusing on the expected content
 - Not much progress reported since last meeting



COSPAR-UNOOSA collaboration

- COSPAR relationship with UNOOSA has been revived, following a two-day COSPAR-OOSA workshop held in May 2017 in Vienna
 - *The COSPAR President presented the outcomes of the workshop to the 60th session of the COPUOS on 7 June 2017 in Vienna.*
 - *This meeting formally recognized the role of COSPAR in Planetary Protection with respect to COPUOS.*
- A Memorandum of Understanding was signed in April 2018, which documents the areas of potential collaboration between COSPAR and UNOOSA, and emphasizes the importance of science and research with respect to the Peaceful Uses of Outer Space
- UNOOSA has appointed Vice-Chairs to the COSPAR Panel on Planetary Exploration and Panel on Space Weather
- A COSPAR half-day Symposium is planned for the February 2019 meeting of the COPUOS Science & Technology Sub-Committee.



PPOSS

- The EC-funded project on Planetary Protection of Outer Solar System is about to end (31 December 2018).
- All in all the project has been successful in many ways:
 - *Ensuring the smooth collaboration of research scientists, managers, engineers and industrialists*
 - *Producing an “International Handbook on Planetary Protection”*
 - *Organizing four successful Training workshops or “Tutorials” in Japan, USA, Germany and China*
 - *Contributing to updating the COSPAR Planetary Protection Policy through the drafting of Research Whitebooks about organic contamination and biological contamination of icy moons*
 - *Drafting an Engineering roadmap*



COSPAR Strategic Seminar

Carnon, France, 3-4 December 2018

- **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!**



Thank you for your attention!

- Visit the COSPAR Web site

<http://cosparhq.cnes.fr>

