

Deadline for abstract submission and financial support is February 12, 2016
<https://www.cospar-assembly.org/>

COSPAR-16-D2.1: Solar Transients: from Solar Origin to Earth Impact and the Outer Heliosphere

The study of solar transients (CMEs, flares, SEPs and CIRs) and how they impact on the Earth and the heliosphere have advanced greatly in the last decade, thanks to multi-spacecraft observations and high performance numerical MHD simulations. Observations of these transients in the small scale near the Sun and the seamless tracking from the Sun to the Earth in the large scale are enabled by a suite of remote-sensing and in-situ instruments, including SOHO, HINODE, SDO, STEREO, IRIS, ACE, WIND, and other synoptic solar and geospace observations. MHD simulations have advanced rapidly, allowing data-driven modeling of realistic events and real-time prediction. In this session we invite contributions based on models and/or observations of solar transients, covering the initiation of CMEs and flares, CME propagation in the heliosphere, CME-driven shocks, the link between CMEs and SEPs, prediction of their arrival times and geo-effectiveness, CIRs, and other general topics on solar transients and their effects on the Earth and in the heliosphere.

MSO : Jie Zhang
DO : Sergio Dasso

COSPAR-16-D2.2: Solar and Heliospheric Science with Future Space Missions

The next few years will see the launch of the ESA/NASA Solar Orbiter and the NASA Solar Probe Plus space missions, together with many other missions like Interhelioprobe (Roscosmos), Aditya (ISRO), SPORT (CNSA), Solar-C (JAXA), and others. The unique suite of remote sensing and in situ instruments that will be launched over the next few years will enable break-throughs in our understanding of solar dynamo and helioseismology, coronal heating, solar wind acceleration, and the mechanisms behind transient events such as coronal mass ejections and solar energetic particles. These will be achieved also thanks to completely new views of the Sun that will be offered by some of these spacecraft (e.g. out-of-ecliptic orbit, close encounter, quadrature alignments, Parker-spiral alignments, etc...). This session seeks to explore the status of key solar and heliospheric science goals that may be addressed within the framework of this new complement of missions. We invite contribution detailing past, present or future observations and strategies, data analysis results and techniques, existing or required theoretical and modelling developments, operational planning for joint instrument and/or mission observations that will be required to underpin scientific progress in this new era in solar and heliospheric exploration.

MSO : Alessandro Bemporad
DO : Christopher J. Owen

COSPAR-16-D2.3: Coordinated Observations and Modeling of Accelerated Particles at the Sun and in the Inner Heliosphere

This session will be devoted to the energetic particles at the Sun and in the Heliosphere. It will deal both with observations and modeling and is aimed at describing the general knowledge on this topic based on the recent observations from the numerous instruments on the different heliospheric missions. The session will discuss both escaping particles and particles interacting at the Sun (diagnosed from X-ray, gamma-ray and radio observations), the relative role of flares and CMEs in the acceleration process, the propagation of particles in the interplanetary medium...

Implications for future inner heliopheric missions (such as Solar Orbiter, Solar Probe Plus, Interhelios,...) will be discussed.

MSO : Robert Wimmer-Schweingruber

DO : Nicole Vilmer

COSPAR-16-D2.4: Reconnection and Turbulence from the Sun through the Heliosphere to Galaxies

Reconnection is a major phenomenon of magnetic energy release in the Universe which can be observed in the Solar system like at the Sun, throughout the heliosphere, in planetary magnetospheres and in the laboratory. Currently a number of space missions is going on like MMS, SDO, STEREO, CLUSTER. Other missions are under preparation like Solar Probe Plus and Solar Orbiter to the Sun as well as Bepi Colombo to Mercury. Accumulated spacecraft data contain a lot of information about reconnection. The session aims at the presentation of data and their interpretation, of their comparison with appropriate numerical simulation results and the verification of reconnection models by laboratory experiments and extrapolations of our knowledge about reconnection to the scale of galaxies.

MSO : Jörg Büchner

COSPAR-16-D2.5: Space Climate

Space Climate is a multidisciplinary scientific field covering long-term (longer than annual, viz- expanding and generalizing the Space Weather concept) space related aspects relevant for the terrestrial environment. This topic includes solar activity, heliosphere, magnetosphere, ionosphere, atmosphere and climate in their interrelation. This Sessions continues very successful scientific events of COSPAR-2012 and COSPAR-2014. Although a special emphasis will be paid upon multi- and cross-disciplinary studies of physical processes dynamically coupling different systems which are otherwise often considered separately, all the subjects related to Space Climate will be discussed. The event is addressed to a wide community including but not limited to solar physics, heliospheric

physics, cosmic ray physics, magnetospheric and ionospheric physics, and atmospheric and climate sciences, with special focus on cross-boundary studies.

MSO : Ilya Usoskin

DO : Kalevi Mursula

Dibyendu Nandi

COSPAR-16-D2.6: Abundance Variations and Fundamental Questions in Solar and Stellar Physics

Element abundance patterns have long been used as diagnostics of physical processes in many areas of astrophysics. Work in recent decades has revealed that the solar composition varies with location; the solar wind and corona can be different to the photosphere and interior, the compositions of which have also been debated in recent years. We propose a session devoted to discussion in a synergistic manner of the implications of variable element abundances throughout the Sun and its wind. Topics to include: Helioseismology and the impact of revised photospheric abundances on our understanding of the solar interior; observations and models of the FIP and Inverse FIP effects and the impact of wave physics on our understanding of coronal abundances; can we say anything about photospheric abundances from coronal observations? Abundance patterns in other stellar settings; e.g. in massive stars, accreting young stars and brown dwarfs will also be included.

MSO: Deborah Baker

DO: J. Martin Laming