We would like to invite you to participate to the COSPAR 2016 in Istanbul.
the deadline for abstract submission and financial support is February 12, 2016
https://www.cospar-assembly.org/
The chairman of the commission E2 (B.Schmieder)

COSPAR-16-E2.1: Solar and Stellar Dynamos and Magnetic Flux Emergence

The generation and emergence of magnetic fields are of crucial importance in understanding a wide variety of phenomena ranging from the deep convective interiors to the helio- and astero-spheres of the Sun and other cool stars. Turbulent convection and large-scale flows exhibit complex interactions with magnetic fields threading solar and stellar convection zones. This session will be devoted to a review of our present understanding of the physical ingredients and their relative contributions to solar and stellar activity cycles, including cycle fluctuations and grand minima. The session will highlight recent progress, future challenges, and foster collaborations in observations and theoretical modelling of solar and stellar magnetic activity. The presentations and discussions will be organised under the following sessions:

New windows on solar & stellar magnetism
Current understanding of solar & stellar interiors
Observational perspectives on stellar magnetic activity and cycles
Theoretical understanding of solar & stellar magnetic cycles: where does the Sun fit?
Convective dynamos and solar/stellar flux emergence
Flux tubes in solar and stellar convection zones
Observational perspectives on small-scale photospheric fields
Surface magneto-convection and small-scale dynamo action

MSO : Emre Isik
D0 : Jie Jiang

COSPAR-16-E2.2: Formation, Destabilization, and Ejection of Magnetic Structures in Solar and Stellar Coronae

Magnetic structures ejected from the Sun typically involve solar prominences or jets, which can play critical roles in the initiation of coronal mass ejections (CMEs). We will focus on different aspects of prominences, including their formation and destabilization in the first part of this session. Is mass loading important for CME initiation, or for preconditioning the CME ? In a second part we will focus on the CME, and in particular the role of the ejected cool material as https://www.cospar-assembly.org/sociated with the prominence. What is the nature of the energy balance, and the role of flux ropes if they exist ? how does the environment of the corona through which the ejected material travels affect the kinematics and deformation of the CME ? What is the role of magnetic topology ?

Due to the wealth of observational data from multiple viewpoints, over a wide range of wavelengths, and covering various distance ranges, as well as recent progress in simulations, these issues can be adequately addressed. This session focuses on studies covering observations, as well as simulations of how prominences, jets, and CMEs erupt and interact with the environment in solar and stellar coronae.
MSO : Brigitte Schmieder
DO :Yuhong Fan

COSPAR-16-E2.3: Solar Magnetism: Data-driven Modeling and Requirements for Future Instrumentation
The Sun's magnetic field lies at the heart of most if not all of the outstanding problems relating to the dynamics, energetics, and morphologies that define its atmosphere. Establishing the three-dimensional structure of the magnetic field throughout this solar atmosphere remains a challenge, and one that requires a combination of advanced modeling techniques and new observations. The goal of the proposed session is to bring together observations, theory and modeling, and data assimilation/incorporation techniques to diagnose the magnetic field in the solar atmosphere. In addition, this session will offer a forum for discussion of the future instrumentation and missions for remote-sensing and in-situ measurements of these magnetic fields.
MSO : Sarah Gibson
DO : Silvano Fineschi

COSPAR-16-E2.4: Multiwavelength Observations and Simulations of Solar and Stellar Flares

Flaring in stars across the main sequence reveals a large range of energies and behaviour. But only flares on the Sun can be studied in great morphological detail. The Sun has the advantage of data with wonderful spatial resolution from missions such as the Solar Dynamics Observatory, IRIS or Hinode. These results are slowly transforming the way we view the magnetic processes that unleash energy in the corona. In addition, there is a clear need to understand flare coronae and chromospheres, and even photospheres, as important sites of strong, multi-wavelength emission, formed in response to the energy flow - by particle beams or other mechanisms - from the corona, and its dissipation. Thus significant contributions to the proposed session will come from observational analyses and numerical simulations of flare chromospheres, both solar and stellar. Various scenarios of energy transport and heating can be tested by observing flaring coronae and chromospheres of the Sun and stars, using the wide range of space and ground-based instrumentation now available. Comparative stellar studies are hugely beneficial in understanding the

behaviour of our Sun during its life cycle – as well as showing us dramatic flarings at very young ages or in binary systems
that reach energies that the Sun will never be able to achieve - named as ‘superflares’. The session will address new observations and diagnostics, and new
simulations (e.g. radiation hydrodynamics) of energy transport, dissipation and radiation from stellar atmosphere with instrumentation such as IRIS, CRISP ALMA, XMM-Newton, SWIFT, Kepler and Chandra. New perspectives with Solar Orbiter, Solar-C and future stellar missions will be also highlighted.
MSO : Louise Harra
DO : Petr Heinzel