Division E Sun and Heliosphere

COMMISSION E1: SOLAR RADIATION AND STRUCTURE

Natalie Krivova **(Germany)**

Alexander Kosovichev

US

Gianna Cauzzi

Italy, US

Natalia Shchukina

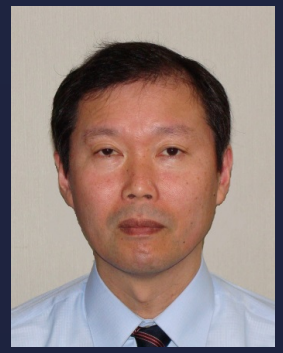
Ukraine

Michele Bianda

Switzerland

Nicolas Labrosse

UK



Yoshinori Suematsu

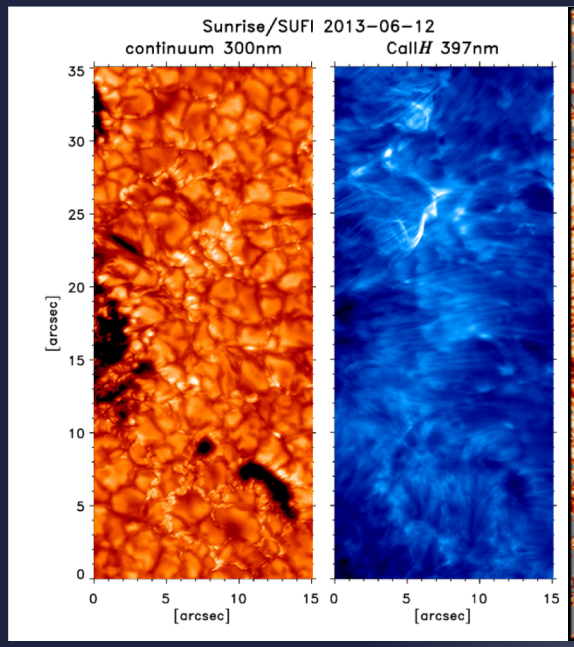
Japan

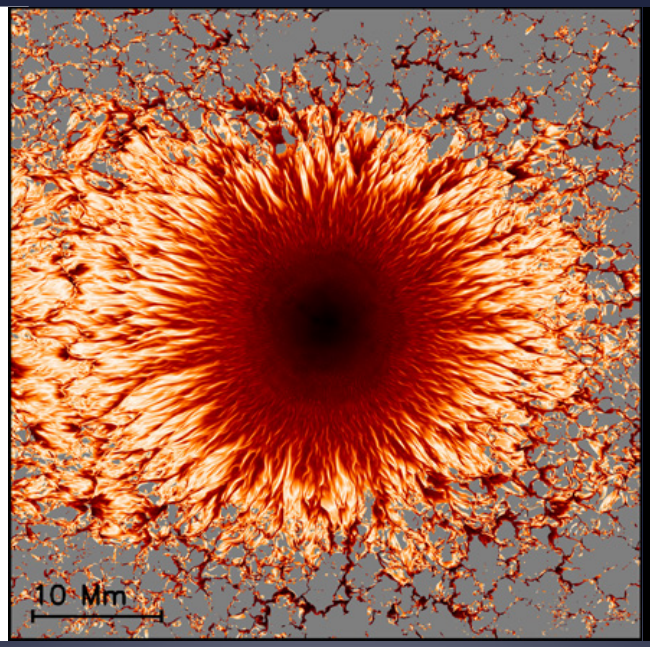
MEMBERSHIP

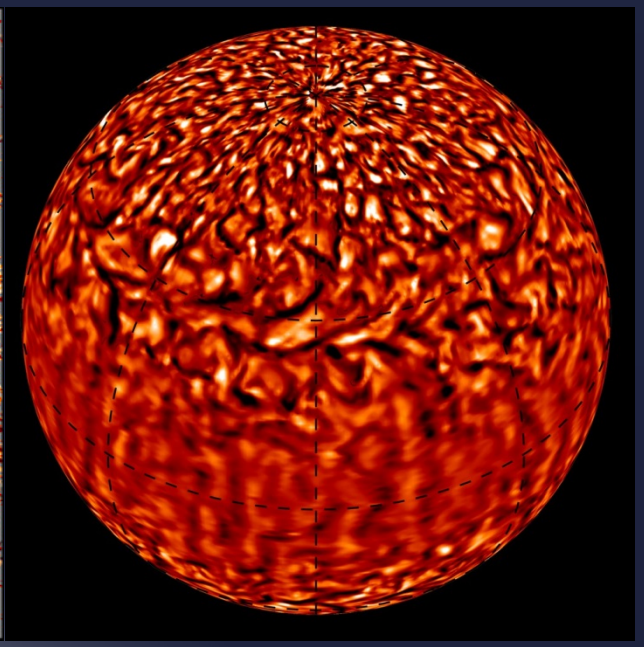
Currently signed: 156

MAIN SCOPE

- Observational and theoretical aspects of the radiation, structure and variability of the “quiet” Sun
- The scientific scope of the Commission is denoted as “quiet-Sun” studies to distinguish it from impulsive solar activity







Sunrise team, MPS

M. Rempel, NCAR

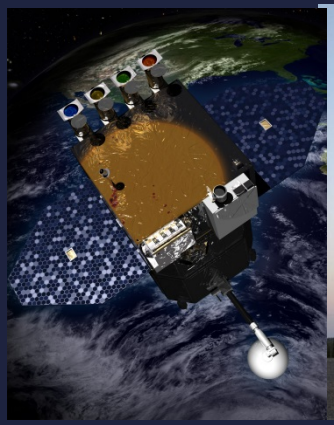
A. Kosovichev, NJIT
N. Mansour, NASA ARC

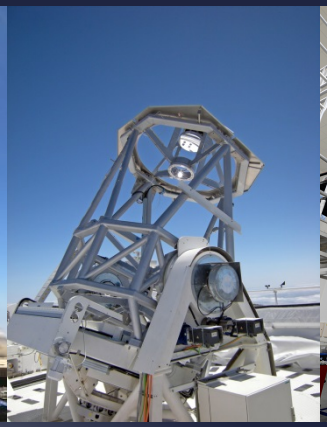
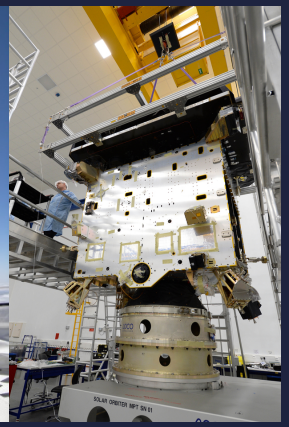
KEY TOPICS

- The solar composition.
- The internal structure and dynamics of the Sun.
- Physics of solar oscillations, waves and helioseismology.
- Solar radiation and its variability.
- Solar magnetoconvection, dynamo and magnetic cycles.
- The structure and dynamics of the solar atmosphere.
- The nature and structure of solar surface magnetic features (sunspots, faculae, the magnetic network and internetwork).
- Long-term synoptic observations of the solar variability.
- New observational and modelling techniques (high-precision photometry, spectroscopy, spectro-polarimetry, UV, X-ray, and radio observations, numerical simulations, laboratory experiments)
- Coordinated international programs, space and ground-based observations, education and public outreach.

MAIN GOALS

- Facilitate communication between individual groups, projects, programmes
- Pursue international cooperation between observers, modellers and theorists
- Coordinate long-term synoptic observations and high-resolution campaigns
- Promote easy exchange / databases of observational data, data analysis tools, theoretical codes and techniques
- Develop connections and collaborations with related communities (observational facilities, data analysis, variability of Sun-like stars, terrestrial climate)



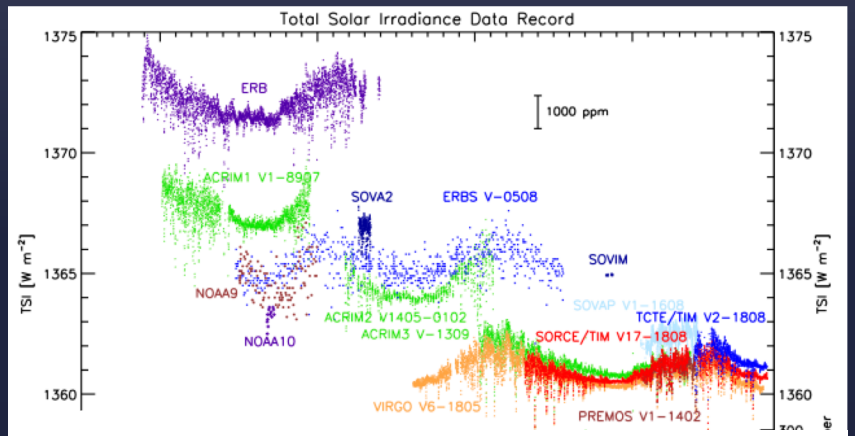
NASA MPS NSO KIS Airbus Defence & Space

ORGANISATIONAL ACTIVITIES

- IAU Symposium 320 “Solar and Stellar Flares and Their Effects on Planets” at the IAU 29th GA in Honolulu (August 2015)
- Focus Meeting 13 “Brightness variations of the Sun and Sun-like stars” at the IAU 29th GA in Honolulu (August 2015)
- IAU Symposium 327 “Fine Structure and Dynamics of the Solar Atmosphere” in Cartagena de Indias, Colombia (October 2016)
- IAU Symposium 328 “Living around Active Stars” in Maresias, Brazil (October 2016)
- IAU Symposium 340 “Long-term datasets for the understanding of solar and stellar magnetic cycles” in Jaipur, India (February 2018)
- Focus Meeting 9 “Solar Irradiance: Physics-Based Advances” at the IAU 30th GA in Vienna (August 2018)
- Focus Meeting 12 “Calibration and Standardization Issues in UV-VIS-IR Astronomy” at the IAU 30th GA in Vienna (August 2018)
- *IAUS 354 „Solar and Stellar Magnetic Fields: Origins and Manifestations“, La Serena, Chile (July 2019 – eclipse!)*

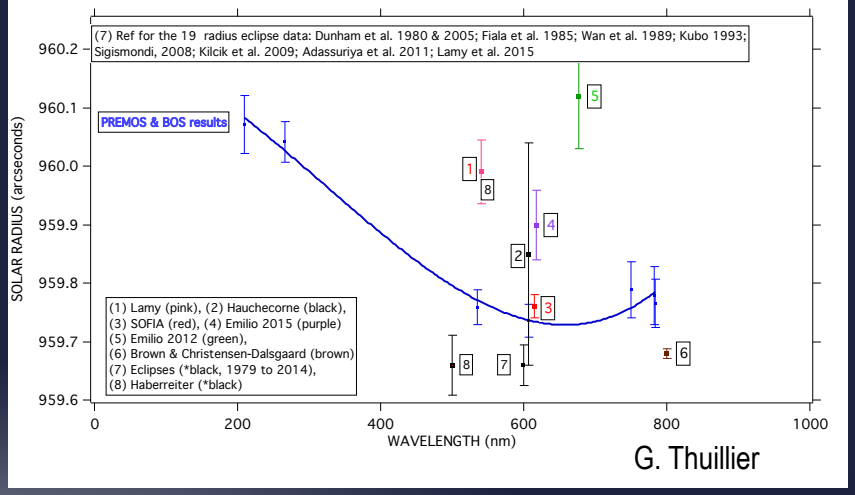
WORKING GROUPS

- Solar Irradiance (separate report)



G. Kopp

- *Recently proposed: Solar radius*
  - ➢ *IAU 2015 Resolution B3 on Recommended Nominal Conversion Constants for Selected Solar and Planetary Properties*



G. Thuillier

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