16th European Solar Physics Meeting



Contribution ID: 562

Type: Talk

## Solar Orbiter/EUI very wide field observations of the EUV corona.

Tuesday, 7 September 2021 14:20 (15 minutes)

At 3.8°, the field of view (FOV) of the Full Sun Imager (FSI) on Solar Orbiter is by far wider than that of any previous solar EUV imager. Depending on the distance of the probe to the Sun along its orbit, this corresponds to 14 to 4 solar radii, to be compared to the 3.5 Rs of STEREO/EUVI or Proba2/SWAP. This very large field of view opens up a new discovery space into a region largely unexplored in the EUV. Since it was expected that stray-light would dominate beyond 2 Rs, a moveable occulting disk can be inserted in the optical path to block light rays up to 0.78° off the optical axis. On March 21 2021, at 0.51 AU, FSI acquired deep exposures at 17.4 and 30.4 nm with the occulting disk in place. The data reveals solar structures extending up to 5 Rs which, to our knowledge, is the furthest ever recorded at these wavelengths. We compare the morphology of the observed structures with close in time observations in white light by the Metis coronagraph. We present a comparison of the measured signal fall-off as a function of distance to Sun-center with a model of coronal emission taking into account collisional excitation and resonant scattering.

Primary author: AUCHÈRE, Frédéric (Institut d'Astrophysique Spatiale)

**Co-authors:** DALMASSO, Kevin (Institut d'Astrophysique Spatiale); ANDRETTA, Vincenzo (Istituto Nazionale di Astrofisica (INAF)); BERGHMANS, David (Royal Observatory of Belgium); HARRA, Louise (PMOD/WRC and ETH-Zurich); Dr LONG, David M. (Mullard Space Science Laboratory, University College London, UK); Prof. SCHUEHLE, Udo; AZNAR CUADRADO, R. (Max Planck Institute for Solar System Research); CHITTA, Lakshmi Pradeep (Max Planck Institute for Solar System Research); CHITTA, Lakshmi Pradeep (Max Planck Institute for Solar System Research); HALAIN, Jean-Philippe (Centre Spatial de Liège); KRAAIKAMP, Emil (Royal Observatory of Belgium); PARENTI, Susanna (Institut d'Astrophysique Spatiale, CNRS/Université Paris-Saclay); ROCHUS, Pierre (Centre Spatial de Liège); ROMOLI, Marco (Università di Firenze); SMITH, Philip (Mullard Space Science Laboratory, University College London, UK); STEGEN, Koen; TERIACA, Luca (MPS, Goettingen, Germany); VERBEEK, C (Royal Observatory of Belgium, Belgium)

Presenter: AUCHÈRE, Frédéric (Institut d'Astrophysique Spatiale)

Session Classification: Plenary 3

Track Classification: Session 2 - The Solar Atmosphere: Heating, Dynamics and Coupling