Geophysical Research Abstracts
Vol. 20, EGU2018-18677, 2018
EGU General Assembly 2018


# Simulating observations of the corona/inner heliosphere with the Wide-Field Imager for Parker Solar Probe by raytracing software

Giuseppe Nisticò (1), Paulett Liewer (2), Volker Bothmer (1), and Angelos Vourlidas (3)

(1) Institut für Astrophysik, Georg-August Universität, Göttingen, Germany (nistico@astro.physik.uni-goettingen.de), (2) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA, (3) Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, USA

The Wide-Field Imager for Parker Solar PRobe (WISPR) will provide us with white-light images of the corona/inner heliosphere offset from the Sun, covering a range of elongation angles from 13.5 to 108 deg, with a high temporal (0.05-60 min) and spatial resolution (plate scale of 1.2-1.7 arcmin per pixel). Such images will be taken from unprecedented points of observation thanks to the highly-eccentric orbits of Parker Solar Probe (PSP), which will reach the minimum perihelion distance below 10 solar radii from the Sun's centre.
Therefore, it is important to understand how WISPR images will look during the perihelion phases and when PSP will eventually fly throughout various coronal structures, e.g. streamers, expanding flux ropes, and jets. In this talk we will provide a collection of synthetic WISPR images for different coronal structures by using the raytracing tools available with the SolarSoftWare package. We will discuss the effects due to the varying radial distance and the high orbital speed (∼200 km/s) of PSP on the WISPR images, including the possibility of 3D reconstruction and the determination of the correct kinematics for expanding flux ropes and jets.