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Poster
PUNCH is a coronagraphic and heliospheric imaging NASA Small Explorer composed of four spacecraft: three Wide Field Imagers (WFI) and one Near Field Imager (NFI), which generates polarization-resolved observations of the corona and heliosphere between 5.5–180 solar radii. In addition to its science mission, PUNCH makes low-latency observations of the corona and heliosphere that can support space weather forecasting operations: the QuickPUNCH project, whose initial goal is to develop and demonstrate the required data products, pipeline, and low-latency capabilities.

We describe the space weather applications for QuickPUNCH observations, including tracking coronal mass ejections (CMEs) and solar wind outflow. We discuss the specific low-latency QuickPUNCH data products for space weather, PUNCH's more general science products, and end-user data access. We provide an overview of research-to-operations opportunities provided by these data, including the uses of polarized coronal measurements for space weather, tracing of CMEs in 3D, and the use of PUNCH data as a constraint for numerical forecasting models. We conclude with a look at potential synergistic opportunities between PUNCH and planned and proposed operational space weather missions such as NOAA's Space Weather Follow-On mission, the European Vigil mission to the L5 Lagrange point, and ground-based observations from observatories such as the COronal Solar Magnetism Observatory (COSMO).

Poster category:

Poster category
Solar and Interplanetary Research and Applications
Poster session day
Tuesday, April 16, 2024
Poster location
13
Meeting homepage
Space Weather Workshop 2024
Download to PDF