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Wide-Field EUV Image Campaigns with GOES Solar UltraViolet Imager

Traditional approaches to tracking solar outflows for space weather forecasting rely primarily on coronagraph images, which generally observe the solar corona above a minimum height of about 2.5 solar radii. Extreme ultraviolet (EUV) imagers have been widely used to characterize features on the solar disk, but their limited fields of view have prevented their use for tracking outflows through the inner and middle coronae. A series of off-point campaigns with the GOES 16-18 Solar Ultraviolet Imager (SUVI) between 2018 and 2024 have provided an opportunity to assess the value of extended EUV images for space weather forecasting applications. These new results demonstrate that wide FOV EUV images are useful for characterizing the early onset of eruptive events and tracking smaller outflow into the solar wind. Because CMEs generally experience the bulk of their acceleration below the height of white light coronagraphic observations, these images provide information about the origins of these events that has not been traditionally available. Together with coronagraphic measurements, EUV images enable connecting CMEs back to their source regions. Of note are the two campaigns in 2021 and 2024 that were conducted to coordinate with the Solar Orbiter and Parker Solar Probe perihelion observations. The April 2024 campaign provided a trove of valuable data due to the active Sun. The upcoming campaign on GOES-19 has the added benefit of a Compact Coronagraph sharing the same Sun-pointing platform with SUVI. Here, we present these new SUVI observations and discuss their potential use in space weather operations.

Primary author: TADIKONDA, Sivakumara (Science Systems and Applications, Inc)

Co-authors: Mr KRIMCHANSKY, Alexander; Dr BETHGE, Christian (NCEI); Dr SEATON, Daniel B.; Mrs DAHYA, Melissa; Mr MCKIM, Stephen A.

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