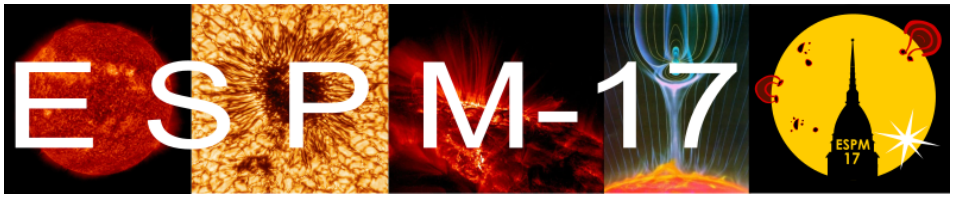

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High-Resolution Observations from the Solar Orbiter Major Flare SOOP Campaign: Insights from X-ray and Fast Cadence EUV Observations of Solar Flares

Thursday 12 September 2024 09:40 (15 minutes)

The Solar Orbiter's Major Flare SOOP (Solar Orbiter Observing Plan) campaign successfully captured several M- and C-class flares as the spacecraft approached perihelion in Spring of this year (March and April). This campaign provided unprecedented observations of solar flare dynamics through high-resolution extreme ultraviolet (EUV) observations using the High Resolution Imager (HRIEUV) of the Extreme Ultraviolet Imager (EUI), combined with X-ray observations from the STIX instrument. The Major Flare campaign was designed to capture the most detailed images of solar flares. The HRIEUV telescope operated in a short exposure mode, acquiring EUV images at an unprecedented 2-second cadence, achieving the fastest cadence non-saturation images of a flare to date. These observations provide unparalleled detail in the early stages of flare development, and the correlation of X-ray and EUV data offers new insights into the energy release and particle acceleration processes during solar flares. This presentation provides an overview of the campaign and highlights the initial results, focusing on the X-ray data and the fast cadence, short exposure EUV observations obtained from HRIEUV. In particular, a detailed analysis of the March 19th M-class flare will be highlighted.

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