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Poster
Solar flares are powerful, sudden bursts of energy from the Sun than can disrupt the Earth’s space environment across many wavelengths, including the Far Ultraviolet (FUV). This research focuses on the X3.9-class solar flare that occurred on 3 November 2003, using high-resolution irradiance data from the SOLSTICE instrument onboard NASA’s SORCE satellite. During this flare, SOLSTICE operated in a Quick Scan mode, allowing the full FUV spectrum to be captured rapidly instead of relying on daily-averaged measurements. These observations will also be compared with predictions from the FISM2 solar irradiance model to assess how well the model reproduces the flare’s FUV response.
The main aim of this study is to understand how energy is distributed across the FUV during a flare, with particular focus on how much lies within and outside the Lyman-alpha line at 121.6 nm. To support this, a similar X3.9 flare from 10 May 2024 is used for comparison using GOES-R EUVS-B measurements in the 117–140.5 nm range. Emission within this wavelength range is integrated to examine how different spectral lines respond during a flare and to provide a consistent comparison with the SOLSTICE data.
This comparison helps place the 2003 flare in context and tests how well broadband instruments capture FUV variability. It also supports ongoing work to estimate how instruments such as GOES/EUVS-B and PROBA2/LYRA would interpret high-resolution spectra, and whether correction factors can be developed to improve their measurements.
Poster session day
Wednesday, April 29, 2026
Poster location
29
Meeting homepage
2026 Space Weather Workshop
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