



Contribution ID: 423

Type: **Poster**

CMEs, Flares, Prominences in Lyman-alpha: Science Preparations for ASO-S/LST

Wednesday, 8 September 2021 11:13 (13 minutes)

We summarize our science preparations for the Lyman-alpha Solar Telescope (LST) aboard the Chinese ASO-S mission. LST has the capability to simultaneously observe the Sun from the solar disk to 2.5 solar radii in both Lyman-alpha and visible light. Our particular interests are CMEs, flares, and prominences in the new Lyman-alpha waveband. We Synthesize these eruptive features in Lyman-alpha based on various numerical simulations concerning both optically thin and thick regimes. Their statistical and case studies based on Lyman-alpha measurements from GOES/EUVS, SOHO/UVCS and so on are also included to reveal flare and CME properties and develop physical diagnostic tools. The synergy with Solar Orbiter/Metis and EUI are discussed as well.

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Session Classification: Poster Session 6.5

Track Classification: Session 4 - From Radio to Gamma Rays: Near-Sun Manifestations and Triggering of Solar Flares and Coronal Mass Ejections