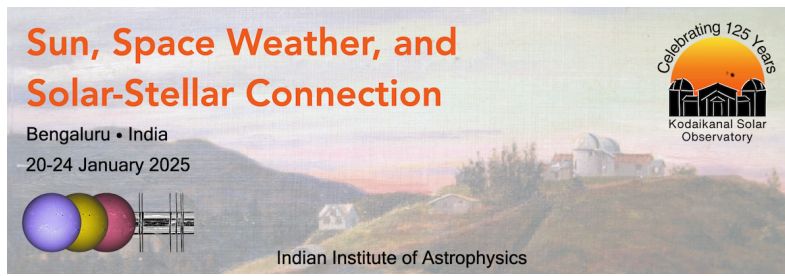


## Sun, Space Weather, and Solar-Stellar Connection



Contribution ID: 131

Type: **Contributed talk**

# Low Coronal Disturbances and Coronal Mass Ejections

*Wednesday, January 22, 2025 11:10 AM (15 minutes)*

Coronal mass ejections (CMEs) can create the most hazardous space weather effects. Therefore it is extremely important to advance our understanding of how they start in the corona, which would be useful for scientifically and accurately predicting them. This may be partially achieved by studying the signatures that CMEs may leave in the low corona as identified in Extreme Ultraviolet (EUV) images before they emerge in coronagraph images. Among them, the coronal dimming may be the most reliable indicator, which is often accompanied by a large-scale coronal propagating front (or an EUV wave as more commonly referred to). We present an ensemble study of EUV waves based on images from the Atmospheric Imaging Assembly (AIA) on board the Solar Dynamics Observatory (there are many hundreds of events since 2010) and from the Extreme-Ultraviolet Imager (EUVI) on board the Solar-Terrestrial Relation Observatory (STEREO). The focus of this study is on the relation of EUV waves with CMEs, which are characterized in coronagraph data from SOHO and STEREO. We discuss the relative magnitude of EUV waves, dimmings and CMEs, which may vary in different phases of solar cycles. The involvement of EUV waves in CMEs may depend on the height at which the CME starts to accelerate and on the large-scale magnetic field surrounding the eruption.

## Contribution Type

### Theme

Energetic Phenomena

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**Session Classification:** Flares and CMEs