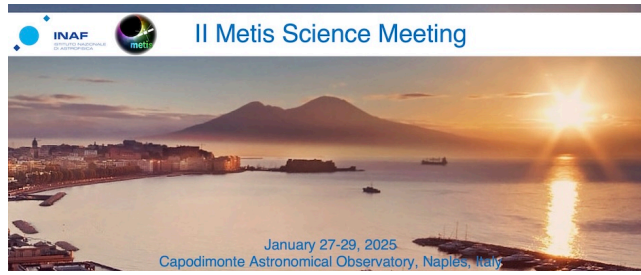


2nd Metis Science Meeting



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Metis Observations of Geoeffective Solar Events

The METIS Coronagraph onboard Solar Orbiter observes simultaneously in Visible (VL) band between 580 and 640 nm and Ultraviolet (UV) band at 121.6 nm. It also observes at high spatial and temporal resolution, thus, allowing a comprehensive interpretation of solar events. In particular, the Metis team is creating a database of solar eruptive events observed in both the VL and UV channels. The Database now has more than two years worth of data from November 2020 to December 2022. An important subset of these events could be geoeffective, thus linking these with various space weather phenomena. The identification of these events from the Metis data is an additional work done alongside building the database. The approach we adopted is described in this talk. In particular, we apply the triangulation method on the potential geoeffective events to determine their accurate position, velocity, and direction of propagation for further analysis. For this purpose, along with the Metis Data, LASCO C2 and STEREO COR2 data were also used. Furthermore, we estimate the transit times to Earth for these events using sophisticated models like WSA-ENLIL and Drag-Based Model (DBM). Further analysis using the space weather forecast targeted inner heliospheric model called EUHFORIA is done which takes geoeffectiveness of the chosen events into context, allowing direct comparison with the observed Dst indices. In this talk, I will present an overview of the Metis catalogue subset focusing on notable geoeffective events from 2022.

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