Coronal Mass Ejections and associated shocks: Build-up and propagation in a complex environment

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Abstract

In recent years, new insight on the formation of CMEs and of their early expansion in the ambient magnetic field arisen from the high cadence observations obtained simultaneously with the SDO/AIA telescope and with the two-sided view of the STEREO spacecraft. We report on a series of CMEs events which occurred during two consecutive days in which EUV eruptive filament activity was quasi-continuously observed. The large set of imaging observations obtained in EUV, white light and radio joined to radio spectral data, provides an opportunity to trace in detail their evolution from the origin in the low corona to a few solar radii. We focus more particularly on i) the build-up of the erupting flux-rope and of the shock; ii) the interaction of the CME and of the associated driven shock with the complex environment which can strongly affect the physical parameters of the shock and the CME latitudinal migration.

Keywords: CMEs, Shocks, eruptive filaments

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