



Stealth coronal mass ejections: identification of source regions and geophysical effects

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We found that the stealth-CMEs recorded within the LASCO field-of-view were accompanied by various manifestations of short-time small-scale activities in the place of the CME assumed formations. Those activities involved emission intensity increases in different EUV channels, motion of small-scale loops (or loop-like structures). Formation of some stealth CMEs frontal structures (FS) was registered from solar observations in the 193 Å channel. For the first time, magnetic field variations in the regions of stealth CMEs formation were studied. Peculiarities were revealed in behavior of positive and negative radial component and the field maximum value at the stage of formation of the stealth CME FSs. Before the eruptive events onset, the field radial component magnitude of each sign decreased, and increased after the end of events. It was established that in some "magnetic points" of the field, there is a reverse correlation between the angle of magnetic flux tube inclination and the maximum of magnetic field inside it. Time velocity profiles of some stealth CMEs FS are determined. We drew a conclusion that the addressed CMEs exerting effect on the Earth magnetosphere did not lead to a noticeable geomagnetic field disturbance described by the Dst-index. At the same time, the passage of stealth CME fronts close to the Earth were followed by weak substorms. It is assumed that some stealth CMEs in the Earth orbit have an MC structure.