

Comparative analysis of impact of ICMEs on near-Mars environment during solar minimum and solar maximum

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We perform a comparative study of impacts that ICMEs have on near-Mars environment (magnetosheath, magnetosphere, ionosphere) during solar maximum and solar minimum. The motivation for the study is the fact that the Sun emits less ionising (UV, X-ray) light during the minima than during the maxima of its activity. This means that the ionosphere of Mars, which, due to the lack of the planet's global magnetic field, represents the obstacle for the solar wind, is weaker during minima than during maxima. Specifically, we compare the impact of two ICMEs, with similar parameters (speed, duration, maximum magnetic field, etc). The first one hit Mars on November 2007, when the solar activity was very low, and the second one on March 2012, when the solar activity was near its maximum. The analysis will provide answers such as how the Sun-Mars interaction changes as a function of the phase of the solar activity cycle.