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Stormy space weather at Mars in 2012

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The solar activity maximum made the heliospheric processes in year 2012 animated with a large number of solar eruptions. This spectacle was well registered by the favorable three vantage point solar observations, namely by SOHO, STEREO Ahead and Behind. These three spacecraft were evenly separated in the ecliptic with $\sim$120 degree longitudinal separation, all three at 1 AU distance from the Sun. This constellation helps to characterize the solar wind properties in the inner heliosphere, we can predict the arrival of solar wind structures at the terrestrial planets with good accuracy. With the wealth of data measured by Mars Express, we study the solar wind response of the plasma environment at Mars. Although the space weather in the inner heliosphere was really stormy with several ICMEs hitting the planets, we managed to differentiate the effects of the shock front and the magnetic cloud in the response of the Martian plasma environment. The behaviour of the different plasma regimes around Mars depends on the characteristics of the solar disturbance and on its duration.