

Cassini data shows Saturn moon may affect planet's magnetosphere

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Enceladus

Scientists have been puzzled by periodic bursts of radiation, known as the Saturn kilometric radiation (SKR), that occur in the planet's magnetosphere. These emissions occur at a rate that is close to, but not quite the same as, the rate at which the planet rotates.

New observations from the Cassini spacecraft's flybys of Saturn's [moon Enceladus](#) in 2008 are revealing new details about the plasma environment around Enceladus and how it may affect Saturn's magnetosphere. These observations could also shed some light on the

SKR rotation rate.

Enceladus sprays out a plume of [water vapor](#) and ice from its south pole. This plume produces ionized gas that is a significant source of plasma for Saturn's magnetosphere and E ring.

Observations described by Morooka et al. show that the plume also produces negatively charged dust that affects the motion of the plasma in this region. This dust-plasma interaction impacts the dynamics of Saturn's magnetosphere, possibly influencing the rate of SKR emissions.

More information: “Dusty plasma in the vicinity of Enceladus”
Journal of Geophysical Research-Space Physics,
[doi:10.1029/2011JA017038](https://doi.org/10.1029/2011JA017038) , 2011.

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