



The Saturnian plasma sheet as revealed by energetic particle measurements

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Since July 2004 the Cassini spacecraft is in orbit around Saturn providing in-situ measurements of the Saturnian magnetosphere. We present measurements taken during the first few orbits by the Magnetosphere Imaging Instrument MIMI and the magnetometer instrument onboard.

Several magnetospheric regions could be identified including the intense radiation belts and ring current regions in the inner magnetosphere as well as the equatorial plasma sheet and the regions close to the outer boundaries of the magnetosphere. We will discuss the structure and dynamics of the Saturnian plasma sheet using the results of measured particle intensities, pitch angle distributions, particle energy spectra of ions and electrons as well as magnetic field components.

Using the different trajectory geometries of the first three Cassini orbits the structure, dimension, and dynamic behavior of the plasma sheet and the entire magnetosphere will be shown. Possible correlations between energetic ions and neutral gas clouds will also be discussed.