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A view of Saturn's magnetosphere from Cassini Magnetic Field Observations

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Observations of the magnetosphere of Saturn from the Pioneer and Voyager era left us with a picture which best described its dynamics as being intermediate between those of the Earth and Jupiter, with solar wind driven effects being as important as rotationally driven dynamics. Observations from the magnetometer instrument onboard Cassini during the first three years of its orbital tour at Saturn are painting a rather different picture, revealing a magnetosphere which is not only much more suggestive of a Jupiter type environment but which also has some surprising features. Some of the phenomena which will be described include: compressibility of the magnetopause; the behaviour of the magnetodisk with clear solar wind control near noon, and warping which occurs on the dayside and dusk flank; magnetic reconnection events in the tail, bent back field lines; rotationally periodic current sheet encounters, interchange like flux tubes, inward moving flux-tubes and ion cyclotron waves.