



The Induced Magnetic Field of Titan

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When Titan moves from the magnetosphere into the Saturn magnetosheath, it carries an imprint of Saturn's magnetosphere field with it. This is a transient field and is removed within hours. When Titan remains in the magnetosphere, the magnetic field can penetrate deeply into the planet, and this field is not erased by a short-term exposure to low or opposite fields. This induced field can be used to probe the deep interior of Titan. We use measurements obtained during the first 5 years of the Cassini mission and compare them with the similar observations over the last 5 years spent in the opposite hemisphere of the magnetosphere. These observations show a reversal of the induced field, suggesting that Titan has an electrically conducting interior.