

## **Short Time Period Variations in Jupiter's Synchrotrons Radiation**

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The long term time variability of Jupiter's synchrotrons radiation on yearly time scales has been established for some time. For many years, theorists have speculated about the effects variations in the solar wind, solar flux, Io, the Io torus, and Jupiter's magnetic field have on the ultra-relativistic electron population responsible for the emission. Early observational results suggested the additional possibility of a short term time variability, on timescales of days to weeks. In 1989 a program designed to investigate the existence of short term time variability using the 85 foot Hat Creek radio telescope operating at 1400 MHz was initiated. The availability of a dedicated telescope provided the opportunity, for the first time, to obtain numerous observations over the full Jupiter rotation period. These and future observations will enable two important studies, characterization and confirmation of possible short term variations, and the investigation of the stability of Jupiter's synchrotrons emission beaming curve. Analysis of Hat Creek observations and early results from the Maryland Point Naval Research Laboratory radio telescope will be presented.