

Jupiter's Synchrotron Radiation: Observed Variations
before, during and after the impacts of Comet S1.9

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Results of an observing program to monitor the synchrotron radio emission from Jupiter's inner radiation belts before, during and after the impact of Comet S1.9 are reported. The observations were made at 2295 MHz as part of the NASA-JPL Jupiter Patrol, a long-term radio astronomy monitoring program begun in 1971. Results from the monitoring program illustrating the nature of the long term variability of the synchrotron radiation will be discussed. During the period surrounding the Comet S1.9 impacts the observational schedule was intensified, providing the ability to observe variations on short time scale (days) at significantly higher time resolution. The data indicate that the intensity of the synchrotron emission at 13 cm wavelength increased by 27 percent within a few days after the comet impacts the longitudinal beaming curve was distorted during the week of the impacts and the magnet latitude beaming curves flattened after the week of the impacts. These results will be discussed along with observations from 1995 and 1996 which characterize the decay rate of the emission as the Jovian system recovers from the comet impacts.