



Properties and Periodicities of Reconnection Events in the Jovian Magnetotail

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Dynamics at Jupiter, including flow bursts, reconfiguration events, and auroral polar dawn spots, have been observed to occur with a 2-3 day periodicity. Is this periodicity always present? Is the 2-3 day timescale characteristic of internal processes driving reconnection in the Jovian magnetotail? To address these questions we have searched for a statistically significant periodicity in reconnection events identified in magnetometer data from the Jovian magnetotail. These events were identified with a set of quantitative criteria requiring an increase to B_θ , the north-south component of the magnetic field, over background levels. We will summarize the properties of our reconnection events, including their location and frequency and the likely location of a reconnection x-line. We have also examined our events for evidence of statistically significant periodic signals by using the Rayleigh power spectrum, which can be used to determine whether a statistically significant periodic signal is present among the occurrence times of discrete events. The 2-3 day recurrence period is visually evident in our events for specific intervals or orbits, and in some cases the Rayleigh power spectrum also peaks for periods between 2 and 3 days. However, we will show that there is no statistically significant periodicity at the 2-3 day time scale in the complete Galileo dataset. The 2-3 day periodicity is therefore not a dominant characteristic of internal processes driving reconnection in the Jovian magnetotail.