

Jovian substorm with a planetary rotational period

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A number of reports on the periodicity of magnetospheric disturbances have been presented by Galileo observations (Woch et al., 1998; Krupp et al., 1998; Mauk et al., 1999; Louarn et., 1998 and 2000), and the shortest period for the reported periodicity was about 3 days. Here, we speculated on the existence of recurrent disturbances once a planetary rotation during the expansion phase of the magnetosphere. The low frequency Jovian radio emission, JAC, shows a recurrent appearance with the planetary rotational period, associated with the emission of QP radio bursts, when a certain System III longitude faces a restricted local time. This JAC disturbance implies the periodic release of rotational energy of Jupiter.