

Source characteristics of Jovian Quasi-Periodic burst

Tomoki Kimura[1]; Fuminori Tsuchiya[2]; Hiroaki Misawa[3]; Akira Morioka[4]

[1] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [2] Planet. Plasma Atmos. Res. Cent., Tohoku Univ.; [3] PPARC, Tohoku Univ.; [4] Planet. Plasma and Atmos. Res. Cent., Tohoku Univ.

Quasi-Periodic burst (QP burst) was discovered by Voyager and its characteristic features were reported by Ulysses observations when Ulysses flew by Jupiter in February 1992. QP burst has tens of minutes periodicity and frequency range from VLF to LF. Ulysses/URAP detected two kinds of QP burst which have 15min and 40min periodicity, and they were named QP15/QP40 burst. It was also reported that energetic MeV electron bursts are accompanied with QP40 bursts. Previous studies suggest that source region of QP burst is located on the polar cap region.

Apparent source location of QP burst, 40min/15min periodicity and acceleration process of energetic particle which may generate QP burst, however, are still unknown. In this paper, we here analyzed statistically the occurrence probability of QP burst with respect to the Jovian magnetic latitude and System3 longitude to determine the location of source region and directivity of QP burst. Analyzed result which covers latitudes (N20~N80) revealed very characteristic structure of occurrence probability.