

木星磁気圏プラズマ変動期における放射線帯電波の観測

Observation of Jupiter's synchrotron radiation in the magnetospheric variation period

*三澤 浩昭¹、土屋 史紀¹、佐藤 慎也¹、北 元¹、関戸 衛²、岳藤 一宏²、川合 栄治²、近藤 哲朗²、長谷川 新吾²

*Hiroaki Misawa¹, Fuminori Tsuchiya¹, Shinya Satoh¹, Hajime Kita¹, Mamoru Sekido², Kazuhiro Takefuji², Eiji Kawai², Tetsuro Kondo², Shingo Hasegawa²

1.東北大学大学院理学研究科惑星プラズマ・大気研究センター、2.情報通信研究機構

1.Planetary Plasma and Atmospheric Research Center, Graduate School of Science, Tohoku University,

2.National Institute of Information and Communications Technology

Rapid variation of relativistic electrons in Jupiter's radiation has been inferred with the time scale of a day or less from the observation of Jupiter's synchrotron radiation (JSR) at 327MHz. The Galileo Jupiter orbiter data showed this rapid variation has some relation with the (recurrent) magnetic reconfiguration events (MRE) in the outer magnetosphere, however, the causality of the rapid variation of JSR and MRE have not been known yet. One plausible causality for MRE is proposed to be enhancement of mass loading originally brought by enhancement of plasma originated from Io. In the middle of Jan. to May, 2015, obvious Io plasma enhancement has been identified by the ground-based optical observation (Yoneda et al., 2015) and also the Hisaki spacecraft observation. This phenomena gives us a good opportunity to directly confirm the relation between the occurrence of rapid variation of Jupiter's radiation belt and enhancement of the Iogenic plasma. We have made a quasi regular JSR observation at 2.3GHz for about three weeks in March, 2015 using the Kashima 34m radio telescope with a new observation method to eliminate artificial radio noises. We will report the result of this JSR observation and discuss variation characteristics.

キーワード：木星、シンクロトロン電波、放射線帯、磁気圏変動

Keywords: Jupiter, synchrotron radiation, radiation belt, magnetospheric variation