EXCEEDによる木星観測- オーロラとIPTの増光と動径方向のエネルギー輸送-

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Evidence of inward energy transports in the Jovian inner magnetosphere observed by EXCEED on Hisaki

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We have quasicontinuously observed Jupiter with its moon Io in the extreme ultraviolet spectral range from Hisaki spacecraft and found the transient aurorae and Io plasma torus brightenings. They were sporadic, however, had strong ties. The transient aurora brightening occurred ˜10-hour earlier than that of the torus. This is a clear evidence of radially inward transport of energy across the azimuthal flows from the outer magnetosphere of Jupiter to the inner.

Fast planetary rotation of Jupiter induces azimuthal flow pattern that governs the plasma motion with the magnetic field in the Jovian magnetosphere. We have quasi-continuously observed Jupiter with its moon Io in the extreme ultraviolet spectral range from Hisaki spacecraft and found the transient aurorae and Io plasma torus brightenings. They were sporadic, however, had strong ties. The transient aurora brightening occurred ˜10-hour earlier than that of the torus. This is a clear evidence of radially inward transport of energy across the azimuthal flows from the outer magnetosphere of Jupiter to the inner.