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On the relation between Jovian aurorae and the loading/unloading of the magnetic flux: simultaneous measurements from Juno, HST and Hisaki (Invited)

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We present simultaneous observations of aurorae at Jupiter from the Hubble Space Telescope and Hisaki, in combination with the in-situ measurements of magnetic field, particles and radio waves from the Juno Spacecraft in the outer magnetosphere, from  $\sim 60$  RJ to 80 RJ during March 17 to 22, 2017. Two cycles of accumulation and release of magnetic flux, named magnetic loading/unloading, were identified during this period, which strongly correlate with electron energization and auroral intensifications. Magnetic reconnection events are identified during both the loading and unloading periods, indicating that reconnection and unloading are independent processes. The loading/unloading processes also correlate with MeV heavy ion fluxes, implying a potential role in Jovian X-ray emissions.