Atmospheric impacts of auroral electrons as observed by Arase satellite and ground-based observations at Syowa station

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We introduce the Arase-Syowa conjunction events occurred on 2017 May 28 0000-0200 UT and 2017 June 30 2200-2400 UT. The May 28 event occurred during the main phase of an intense magnetic storm as driven by a slow coronal mass ejection. Arase satellite passed across pulsating auroras and then entered into north-south aligned discrete arcs. The June 30 event occurred during a recovery phase of an isolated moderate substorm at a quiet solar wind condition. Arase satellite passed across pulsating auroras. The atmospheric response to these different types of auroras are compared and evaluated using ground-based observations at Syowa station.