

# Ground and satellite observation of low-latitude auroras at the initial phase of magnetic storms

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Using highly sensitive optical instruments, twenty events of low-latitude auroras have been identified during the high solar activity period of 1999-2004. Some of these low-latitude auroras appeared at the initial phase of magnetic storms at less than 2 hours from the onset of magnetic storm (e.g., April 6, 2000, October 21, 2001, and October 30, 2003). In the presentation, we show comparison of these initial-phase low-latitude auroras and simultaneous particle and field data obtained by the NOAA and DMSP satellites.