



## Optical lightning observations with photometers on the International Space Station and Radio observations from the ground

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The Global Lightning and Sprite Measurements (GLIMS) mission for lightning and transient luminous events (TLEs) observations of lightning was conducted from 2012 to 2015 [1, 2]. The optical and radio observational instruments are installed on the International Space Station (ISS). The optical instruments are the lightning and sprite imager (LSI) and six photometers (PHs). The LSI and PHs provide us the optical intensity and the location of the optical lightning emission, respectively. We focus on the light curve data with the PHs. We also used the ground based lightning observations, which are the National Lightning Detection Network (NLDN) data. To discuss the relationship between the optical data from space and the lightning discharge processes, we compare optical lightning data collected with PHs on the ISS with NLDN lightning location system. The correlation between the optical intensity of the lightning discharges recorded by the PHs and the lightning discharge process is identified using the NLDN data. In addition, the relationship between the absolute optical intensity and the peak current of negative and positive return strokes of natural lightning is discussed.

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