

**The Changing Nature of Optical Lightning Flashes over the Thunderstorm Life Cycle**

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**Contents of this file**

Video S1

**Introduction**

An animation of GOES-16 ABI and GLM imagery. ABI infrared (channel 14) radiance data is overlaid on top of NASA blue marble stock imagery. GLM event energy is “added” to the ABI cloud overlay to brighten the clouds where there is lightning according to the energy of the flash. The lateral development of GLM flashes is overlaid in yellow tracing the path from each group to the nearest preceding neighbor group in the flash. GLM data are accumulated over 5 minutes to match the ABI CONUS time stamps.

**Movie S1.** An animation of GOES-16 ABI and GLM imagery from 00:02 UTC on 4/13/2018 to 17:52 UTC on 4/17/2014.