

# Lightning Research with High-Speed Video



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Most of what is known about the structure and time evolution of lightning was determined by high-speed photography. The first measurements were obtained using a two-lens streak camera, named Boys camera after its inventor. In a streak camera a relative movement between the lens and the film is used to record the phases of a lightning discharge. The advent of high-speed motion digital video cameras allowed the use of temporal high-resolution video images of lightning flashes. Currently, robust and portable high-speed video cameras offer a wide range of frame rate and exposure options ranging from 1,000 to over 300,000 images per second. From analyses of digital high-speed video records of thousands of negative cloud-to-ground (CG) lightning flashes, hundreds of positive CG flashes, tens of upward lightning flashes and several bipolar CG flashes in Brazil, various lightning properties have been determined. This lecture will also show how upward flashes are usually initiated and how downward lightning connects to ground structures.

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**Tuesday, October 4, 2016**

**3:15—4:45 pm**

**OLS, Room 130**