



Observations and simulations of the sympathetic eruptions on 2010 August 1

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During the rise of the new solar cycle, the Sun has produced a number of so-called sympathetic eruptions, i.e. eruptions that occur close in time in different source regions. While it has become clear in recent years that in many of such events the individual eruptions must be magnetically connected, the exact nature of these connections is not yet understood.

A particularly beautiful case, which consisted of half a dozen individual eruptions, was observed by STEREO and SDO on 2010 August 1. Here we focus on a subset of two large, consecutive filament eruptions that were preceded by a nearby CME. We first summarize the main features of these events and then present 3D MHD simulations that were designed to model such a chain of eruptions. The simulations suggest that the two filament eruptions were triggered by two successive reconnection events, each of which was induced by the previous eruption, and thus provide a new mechanism for sympathetic eruptions.