Geophysical Research Abstracts
Vol. 21, EGU2019-6185, 2019
EGU General Assembly 2019
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Observations and Modeling of a High-Latitude Extended Filament Channel Eruption

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We present observations and modeling of the magnetic field configuration, morphology, and dynamics of a high-latitude, extended filament channel eruption observed by SDO. We analyze the 2015 July 10 filament eruption by quantifying a number of physical properties of the CME source region and the CME's evolution through the corona. The resulting slow streamer blowout CME gives rise to the formation of an extended post-eruption arcade above the polarity inversion line that is only poorly visible in disk observations and does not resemble the typical bright post-eruption loop systems. We estimate the reconnection flux from this "stealthy" flare arcade growth and examine the magnetic field orientation and evolution of the erupting prominence. We present preliminary results from our data-inspired numerical MHD modeling of this event and their comparison to the SDO/AIA observations, focusing on the transition from an erupting sheared-arcade prominence to a slow streamer-blowout flux rope CME. The ambiguous on-disk signatures in certain wavelengths suggest that the "stealth CME" phenomenon (and classification) may be more of a continuum of observable or non-observable signatures rather than a distinct type of eruption. As such, these CME events may also be problematic for space weather forecasting.