

RECENT THEMIS AND COORDINATED GBO MEASUREMENTS OF SUBSTORM EXPANSION ONSET: DO WE FINALLY HAVE AN ANSWER?

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For nearly 30 years an often-times heated debate has engaged the substorm community: Do substorms begin with the formation of a new reconnection site in the midtail plasmashet (the Near-Earth Neutral Line model) or do they begin near the transition region between stretched tail and dipolar field lines (the Current Disruption model). The THEMIS mission, with a coordinated suite of five in-situ spacecraft and ground observatories, has greatly extended our understanding of how substorms initiate and evolve. But have the new data resolved the fundamental question? In this talk I review the last few year's of substorm research, with an emphasis of how the THEMIS data have revolutionized our understanding.