Flare and CME on 2006 December 13: a summary review of observations

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An X3.4 class flare occurred in active region NOAA 10930 on 2006 December 13. This flare was associated with an earthward coronal mass ejection (CME) and eventually caused a geomagnetic storm. It was well observed by three instruments on board Hinode satellinte, namely the Solar Optical Telescope (SOT), the Extreme-ultraviolet Imaging Spectrometer (EIS), and the X-ray Telescope (XRT), and also by other space and ground-based observatories. In particular, the SOT obtained a series of vector magnetograms of AR10930 as it crossed the solar disk, thus providing an unprecedented data set to study the evolution of magnetic field toward the onset of the flare and CME. Because of the good coverage by the observational data, this event is being used as the subject of data-driven numerical modelings. In this talk I will review the solar observations of this event.