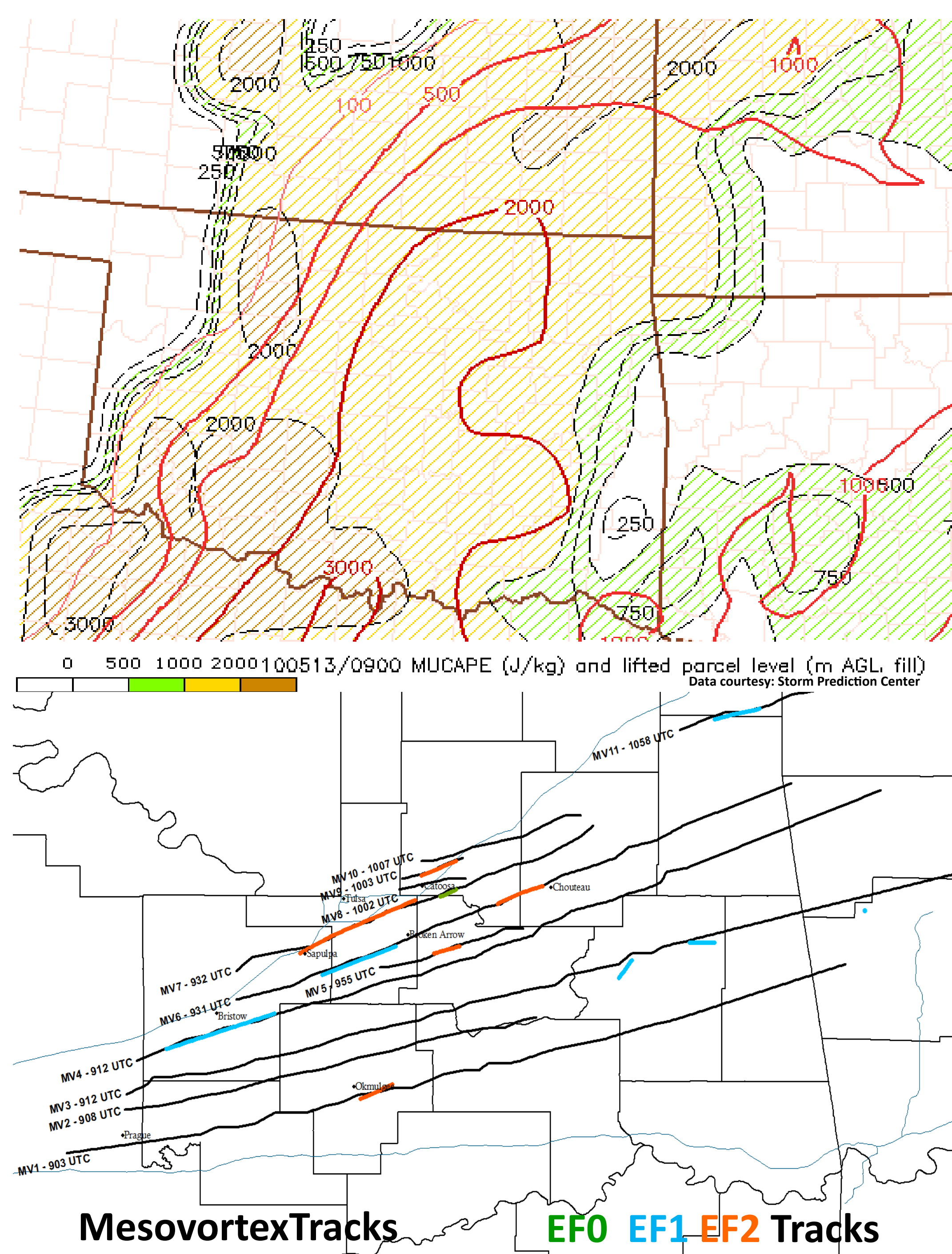
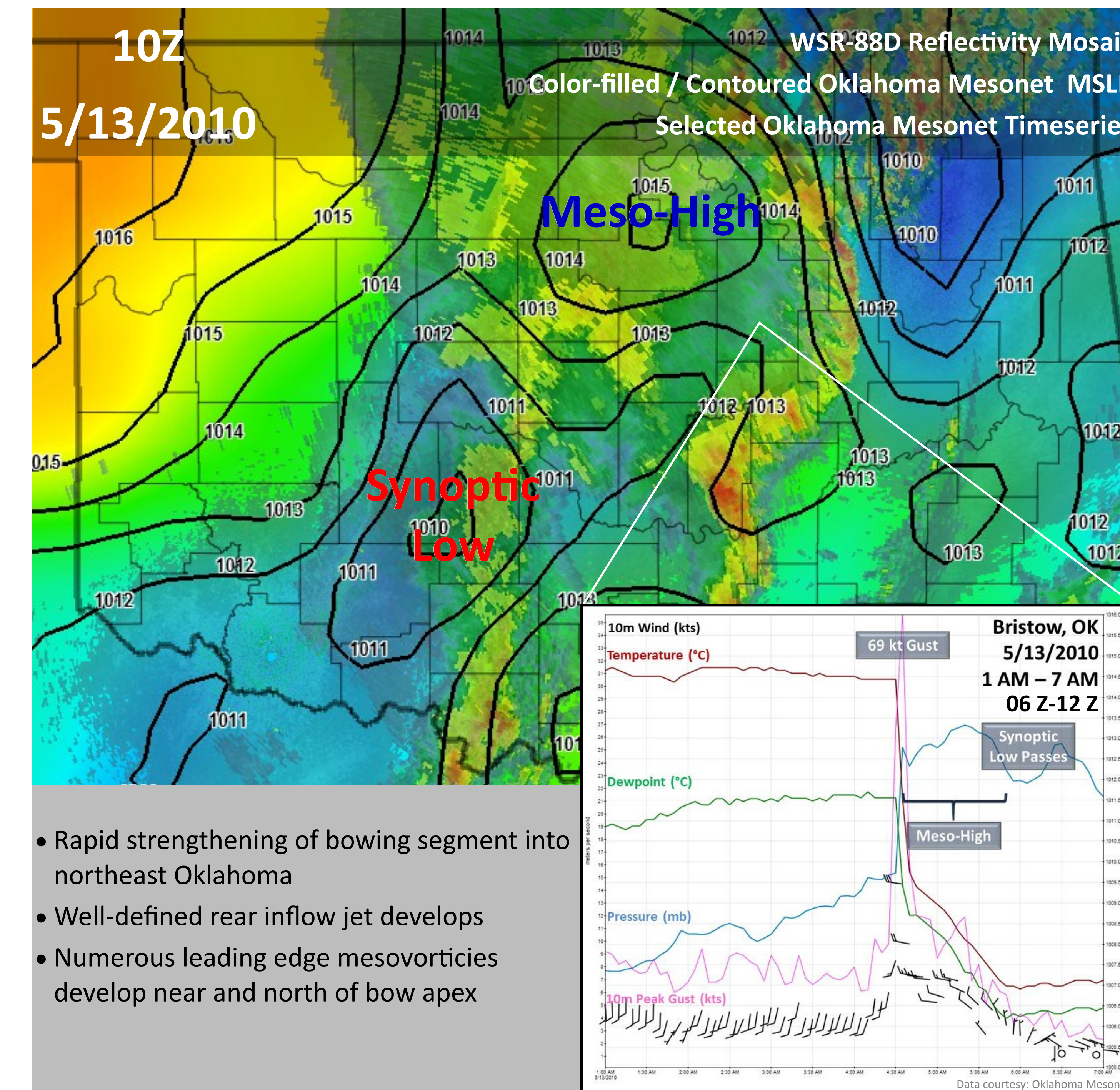
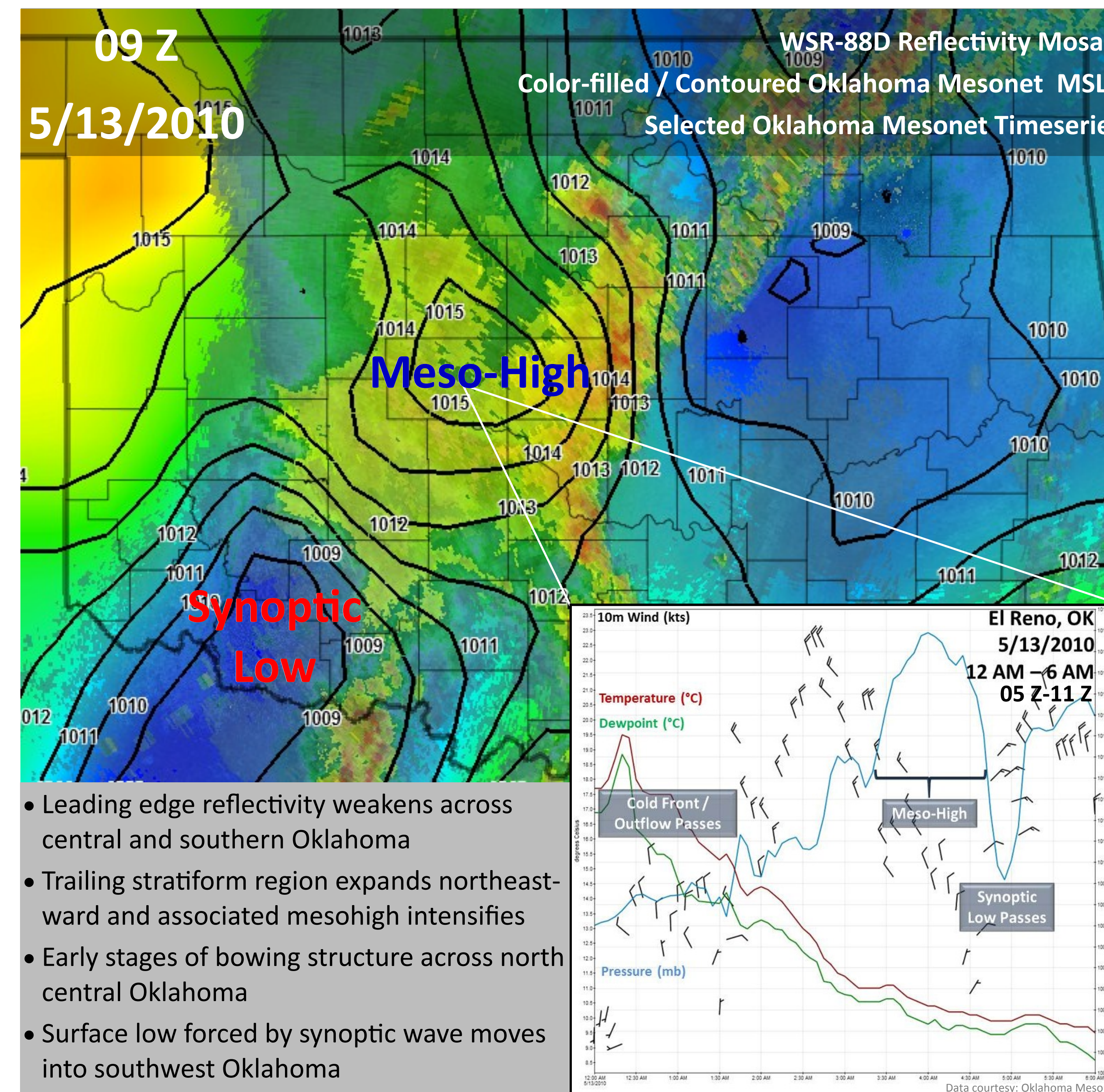
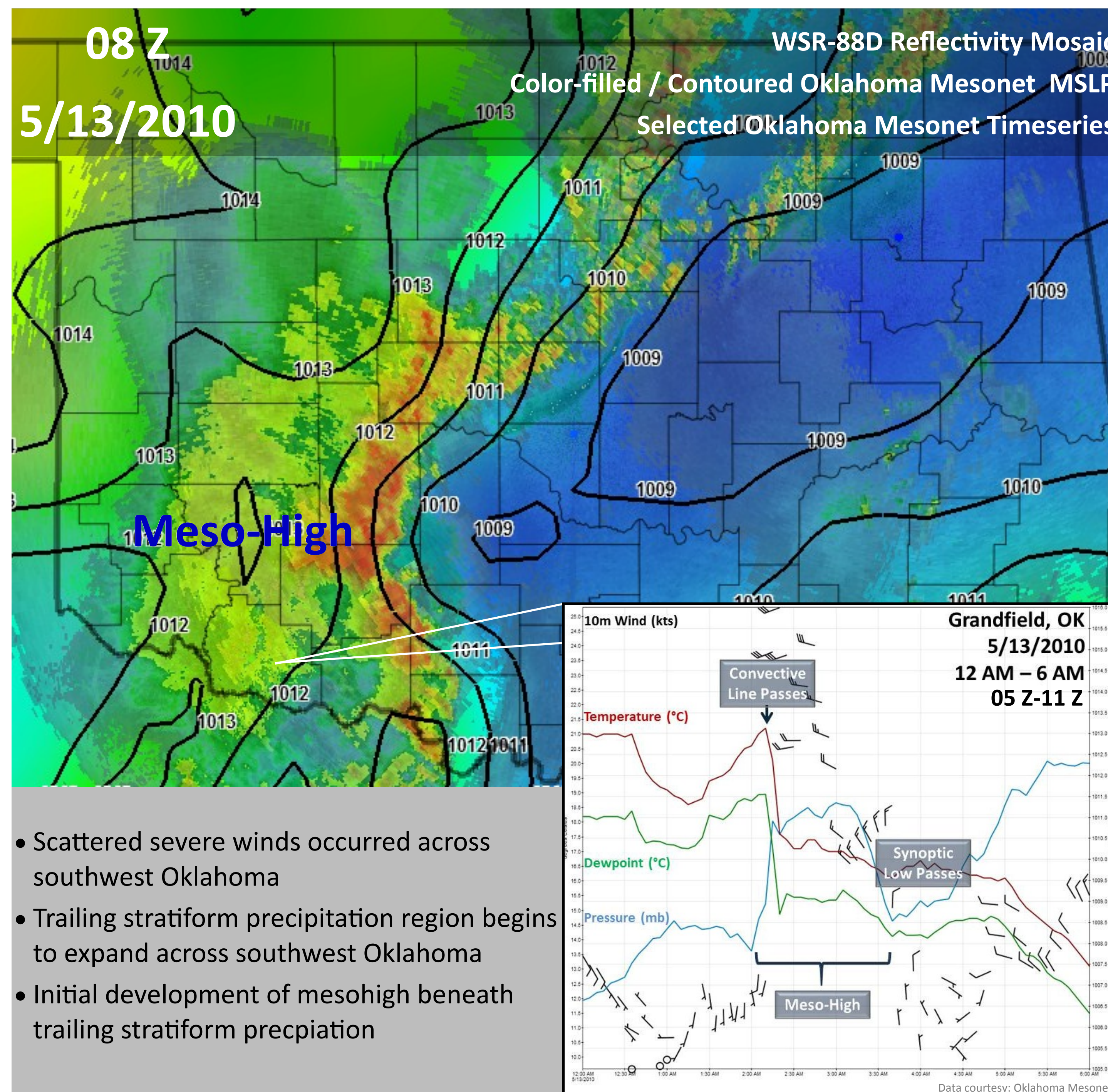
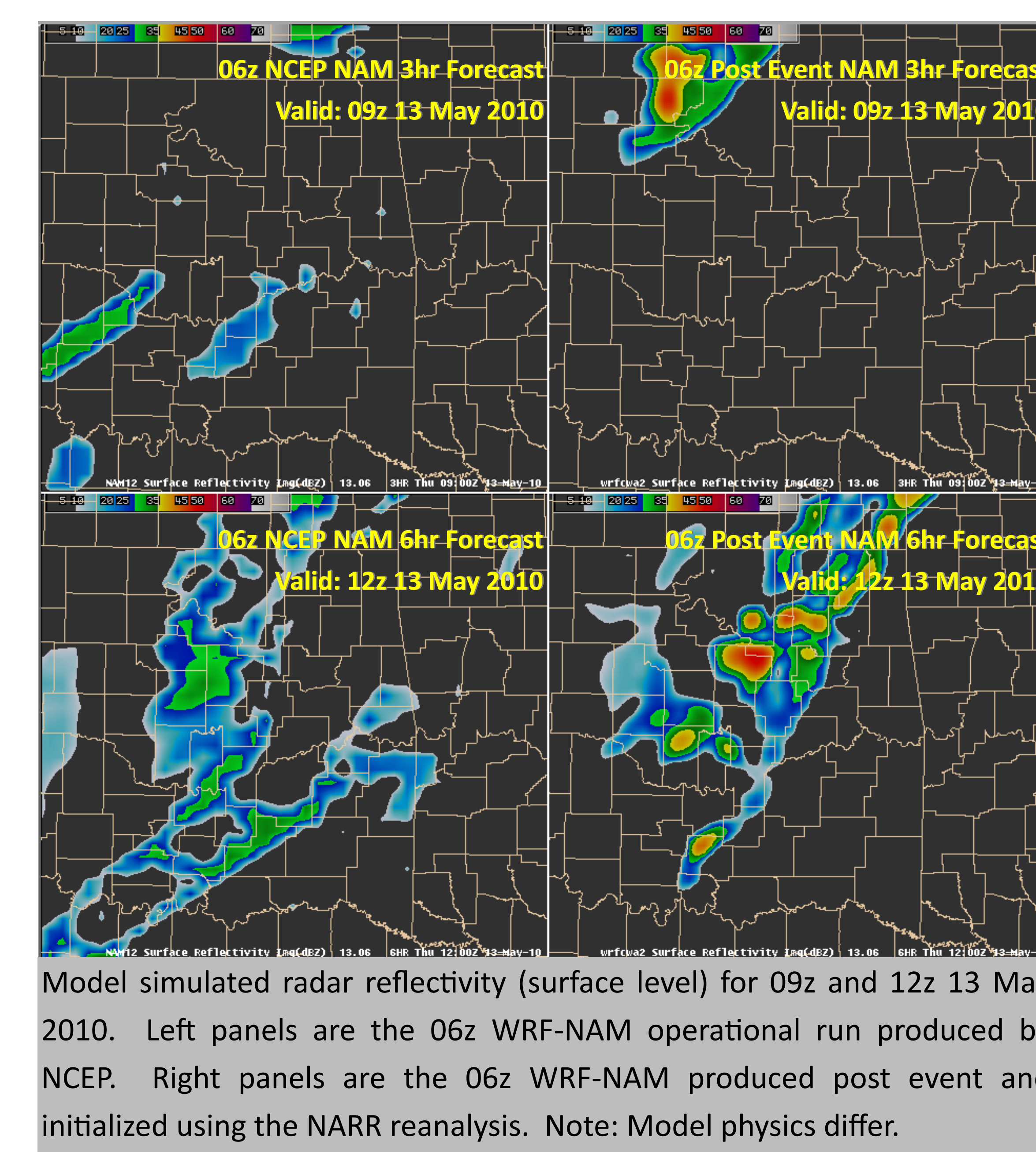
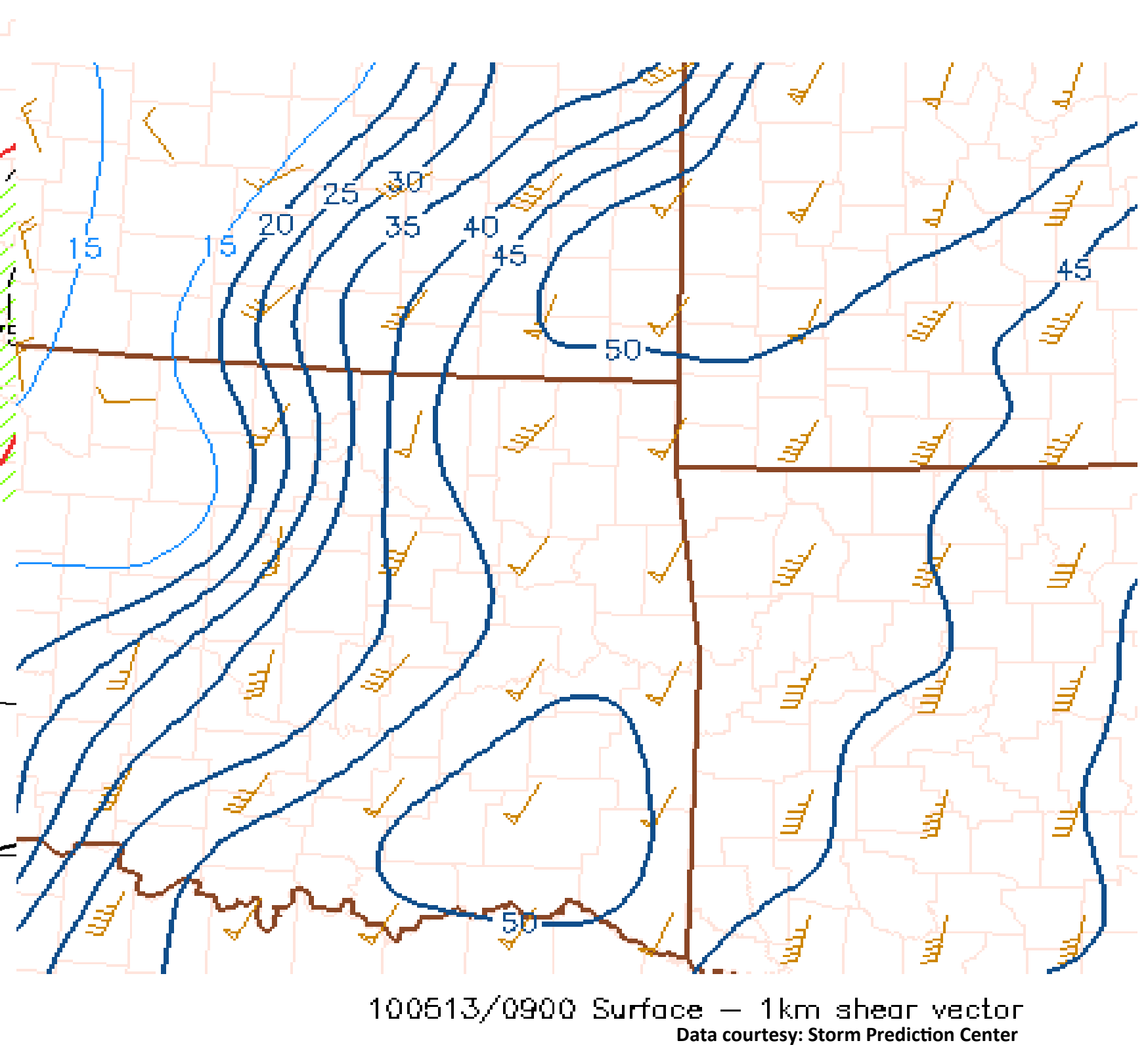


Part 1: Synoptic and Mesoscale Environment

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Widespread convection continued across the Southern Plains during the early morning hours on May 13, 2010. This study focused on the bow echo which intensified rapidly from central Oklahoma through northeast Oklahoma. Eleven tornadoes were documented across northeast Oklahoma and one across far northwest Arkansas, including five EF2 tracks, and all were associated with meso-vortices along the leading edge of the bow echo. This evolution was not forecast well with impacts to both severe weather watch lead time and appropriate severe weather warnings. The short term forecast was impacted by at least two factors: 1) small scale speed max which enhanced upward forcing 2) a rapidly evolving surface pressure pattern. Both of these factors were poorly resolved within short term operational models. This event highlights the challenges associated with short term atmospheric modeling and also reiterates the need for forecasters to continually question any model output using all available data.



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