

# The Hail Outbreak of 02 May 2003: An Overview of One of North Alabama's Costliest Hailstorms

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WFO Huntsville, AL



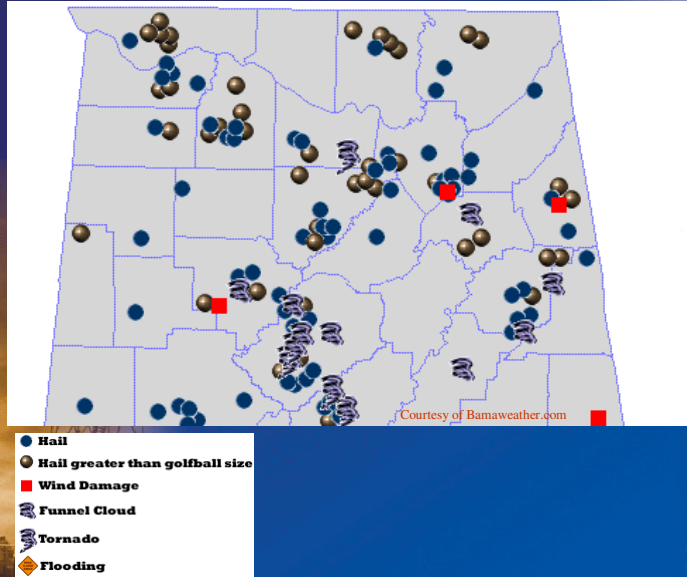
## Event Overview

- Event occurred during the afternoon hours of May 2, 2003 (1800Z-2200Z)
- Numerous reports of hail larger than baseballs
- One of the costliest hailstorms in Alabama history
- Over 30,000 insurance claims
- Over \$50 million in damages – mainly to roofs and automobiles

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# Severe Weather Reports from May 2nd



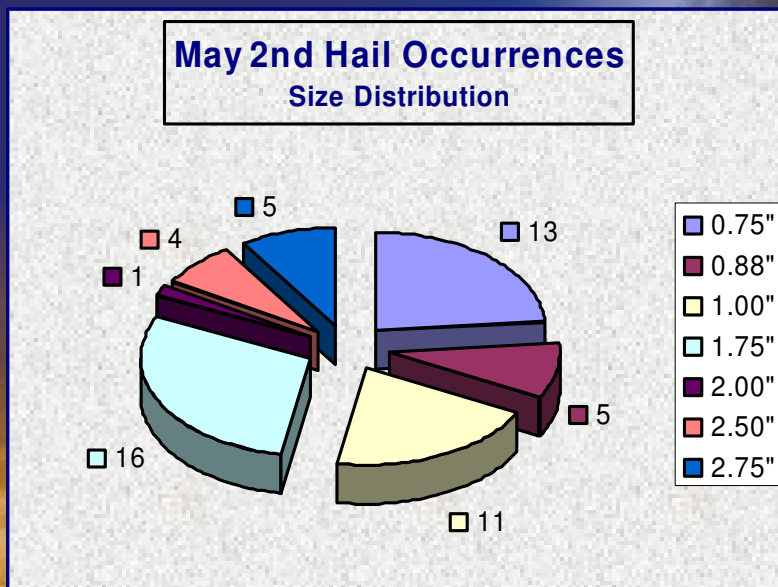
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- Over 60 reports of hail
- Over 25 reports of hail the size of golfballs or larger
- Only 1 damaging wind report

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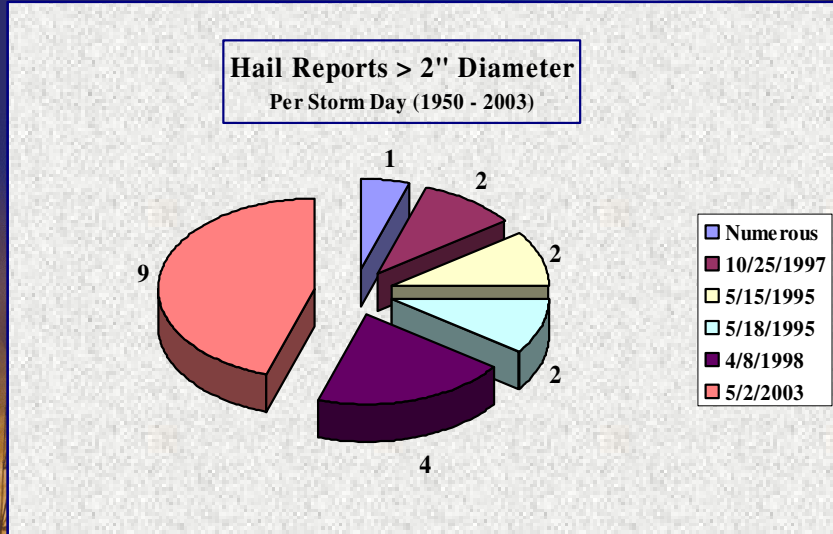
# May 2nd Hail Distribution



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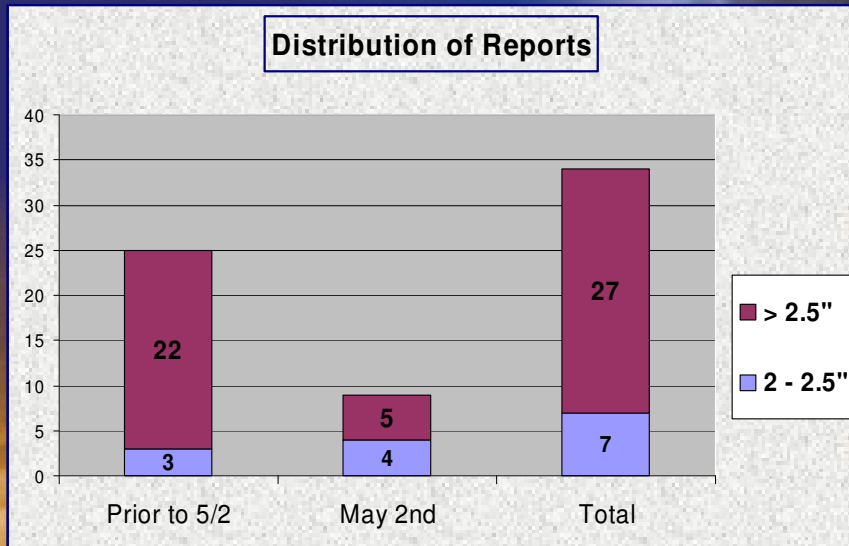
# Large Hail per Storm Day



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# Historical Perspective



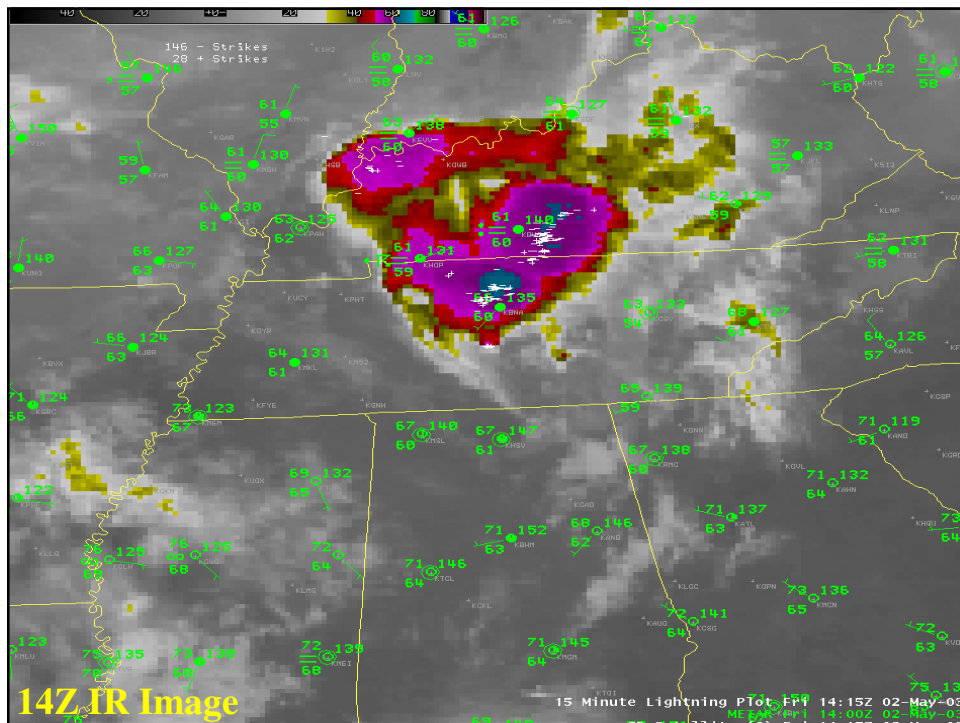
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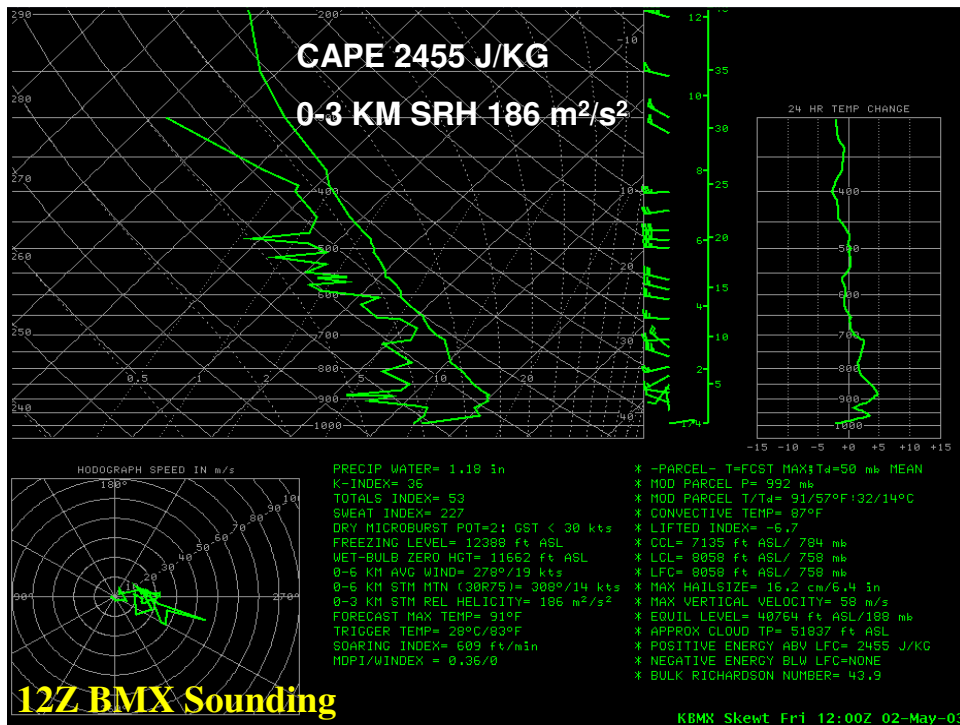
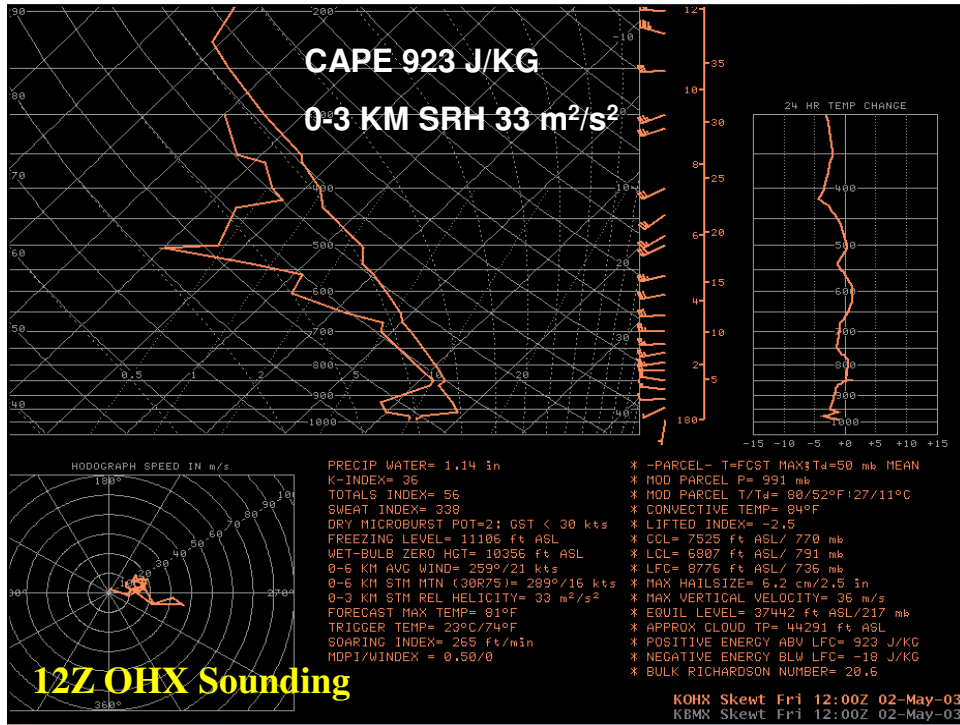


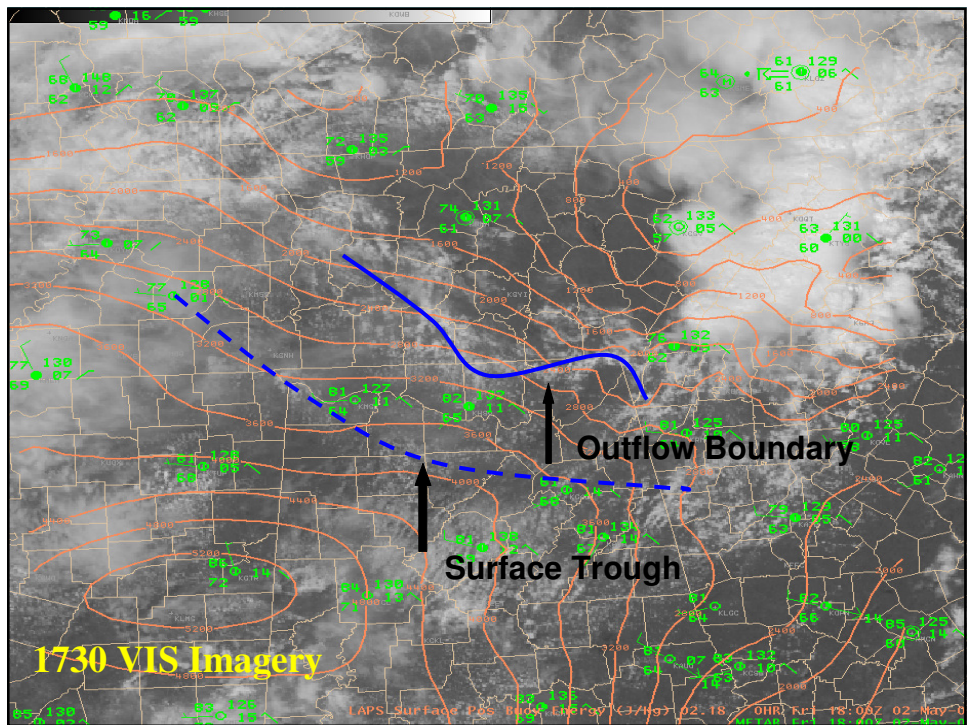
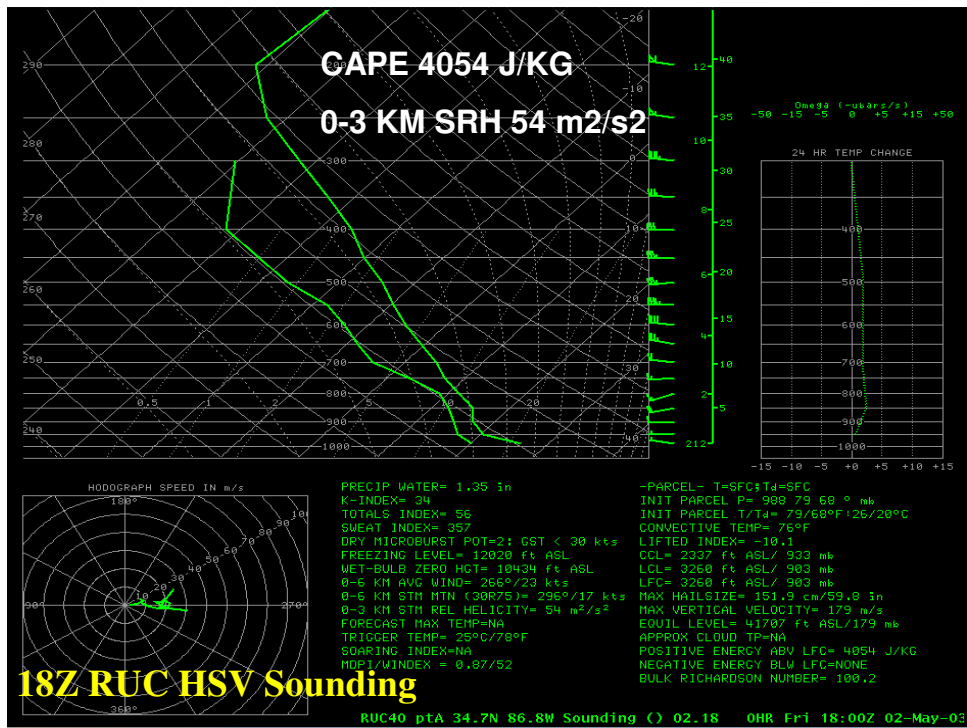
# Meteorological Overview

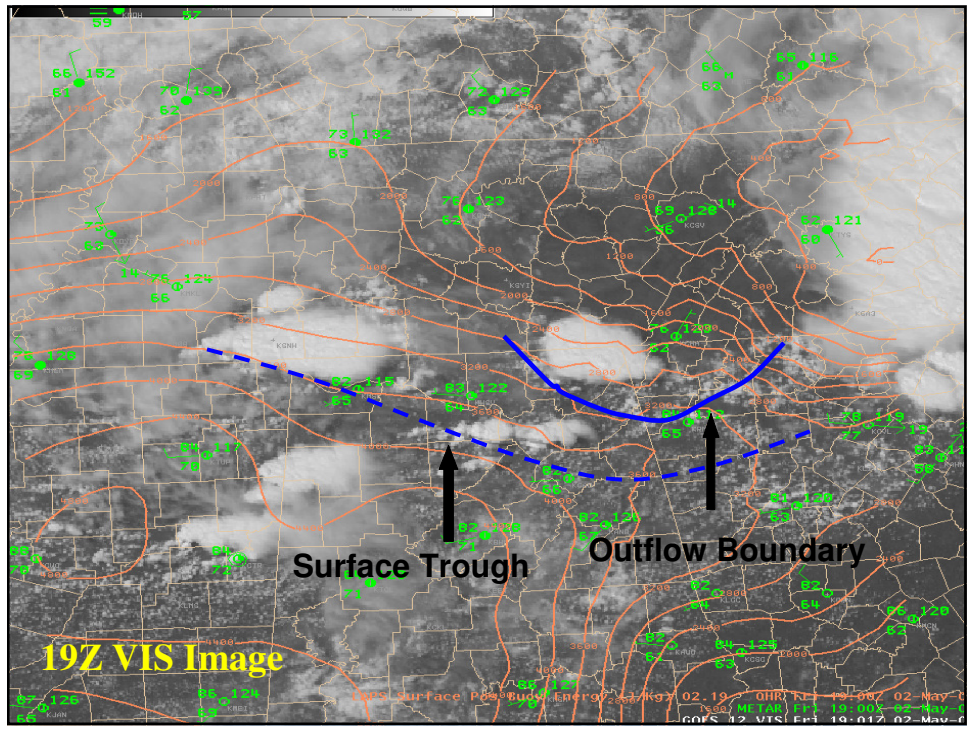
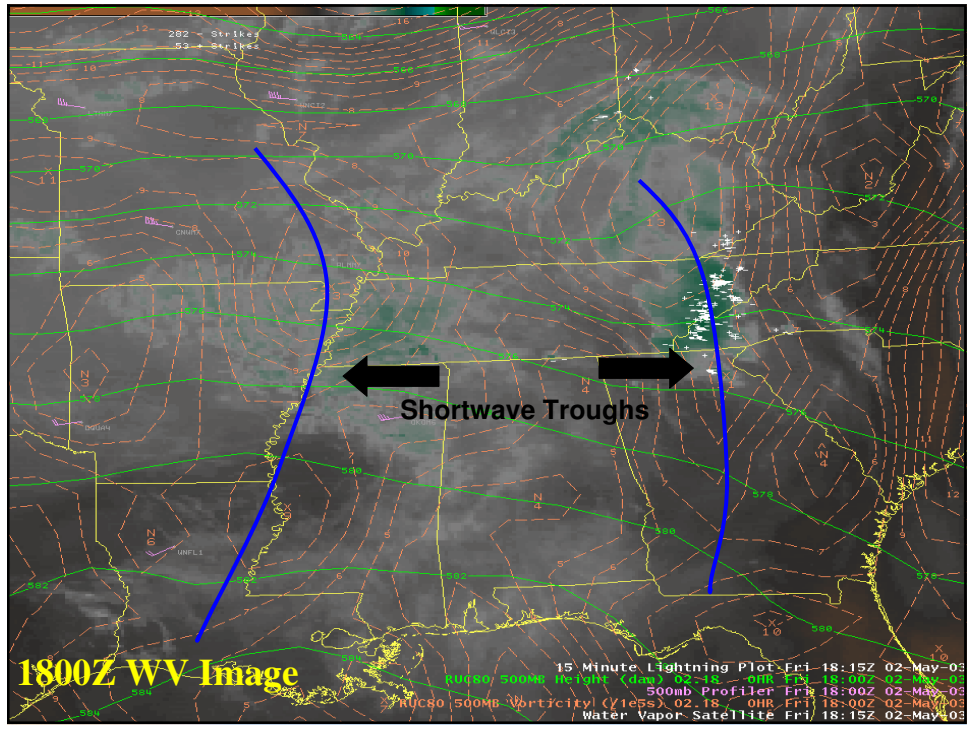
- Early morning MCS moved eastward across TN – outflow boundary along AL-TN border
- Primarily zonal upper flow with embedded shortwaves
- Approaching jet streak/increasing upper level divergence
- Low level forcing driven by mesoscale boundaries
- Very high CAPE/Steep lapse rate environment (CAPE >3500 J/Kg; Lapse Rates >7 C/Km)
- Unidirectional shear profiles – splitting supercells

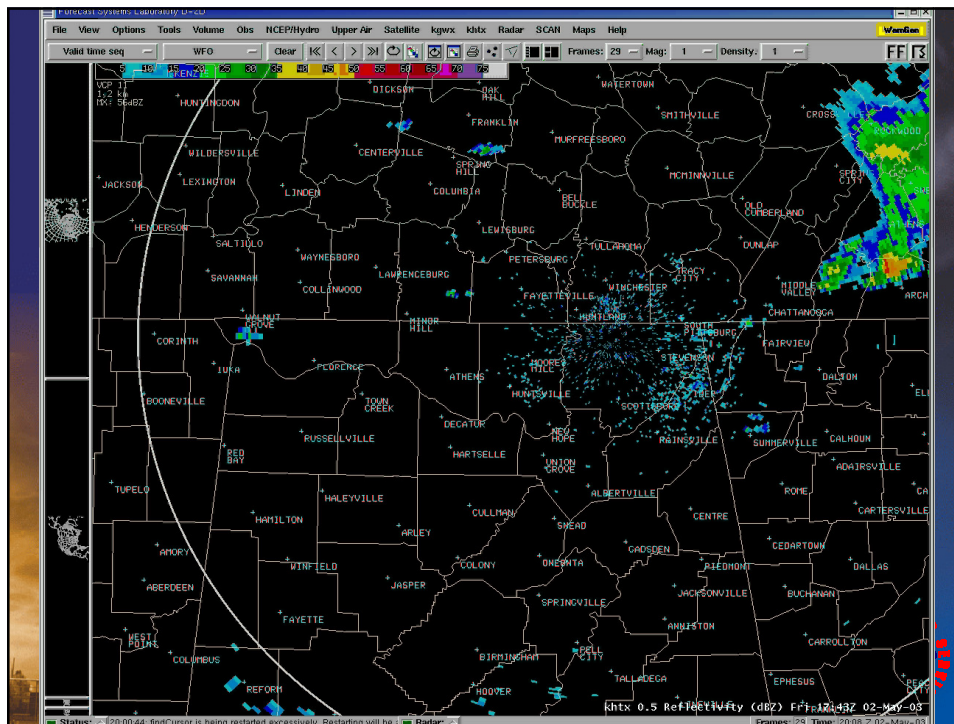
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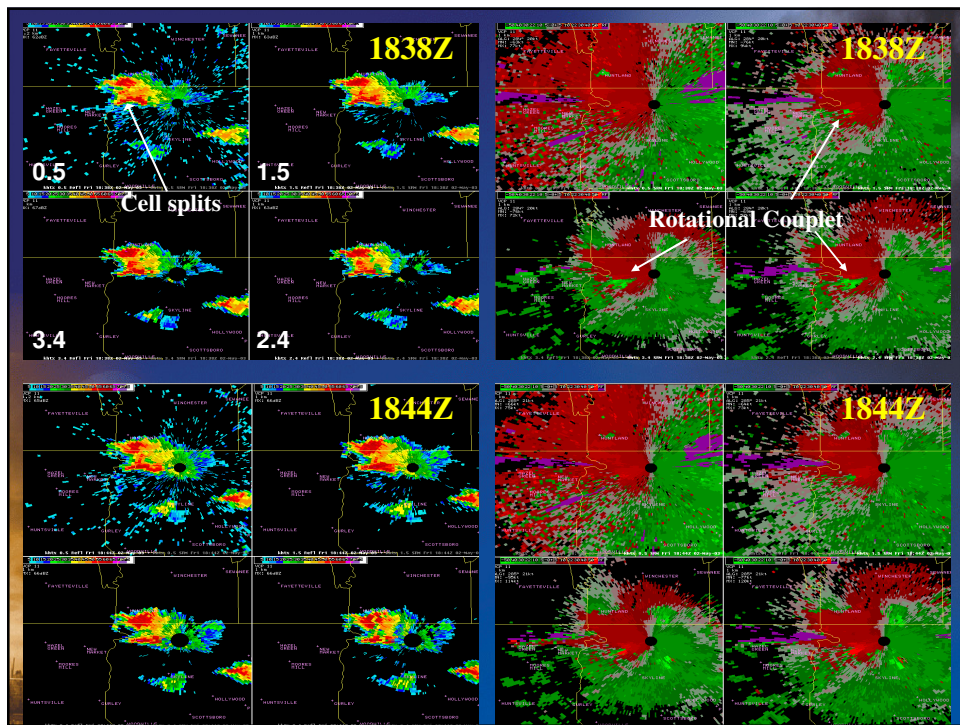
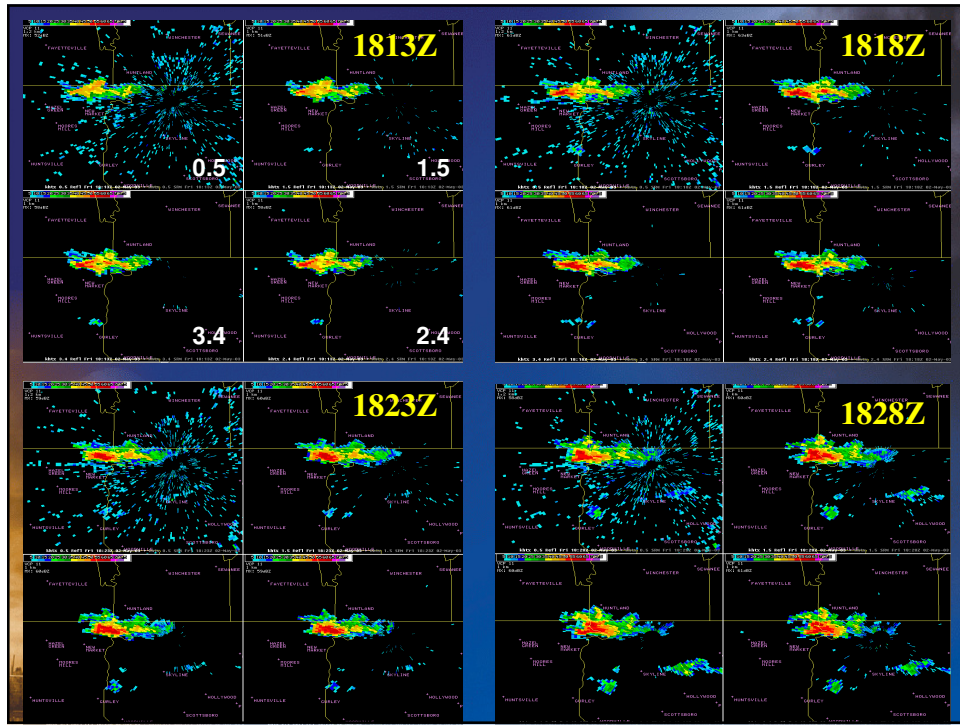
## Storm Focus #1 – Jackson County

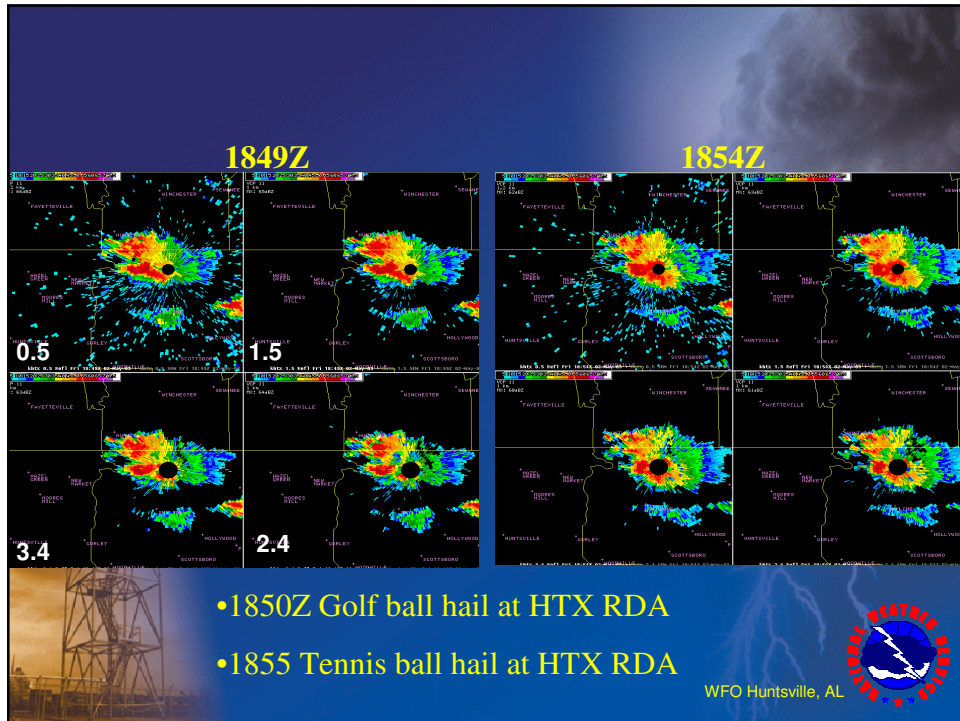
- Developed rapidly along outflow boundary
- Exhibited strong rotational velocity
- Upper level storm sampling limited due to proximity to radar
- Produced golfball to tennis ball size hail
- Tornado warning issued based on reflectivity/velocity structure and boundary interaction
- No wind/tornadic damage observed

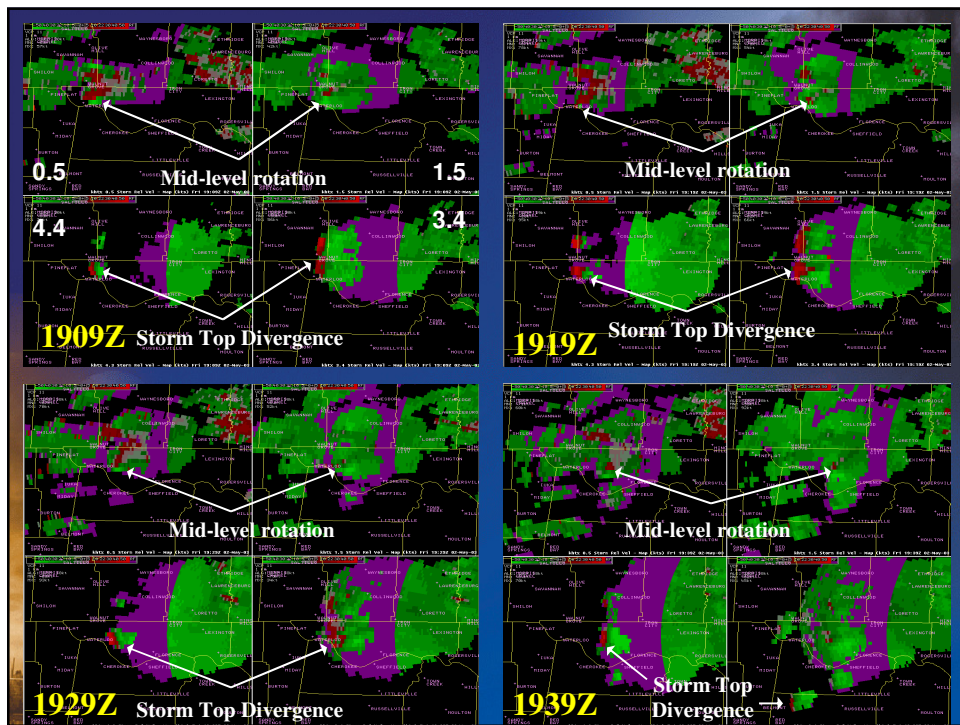
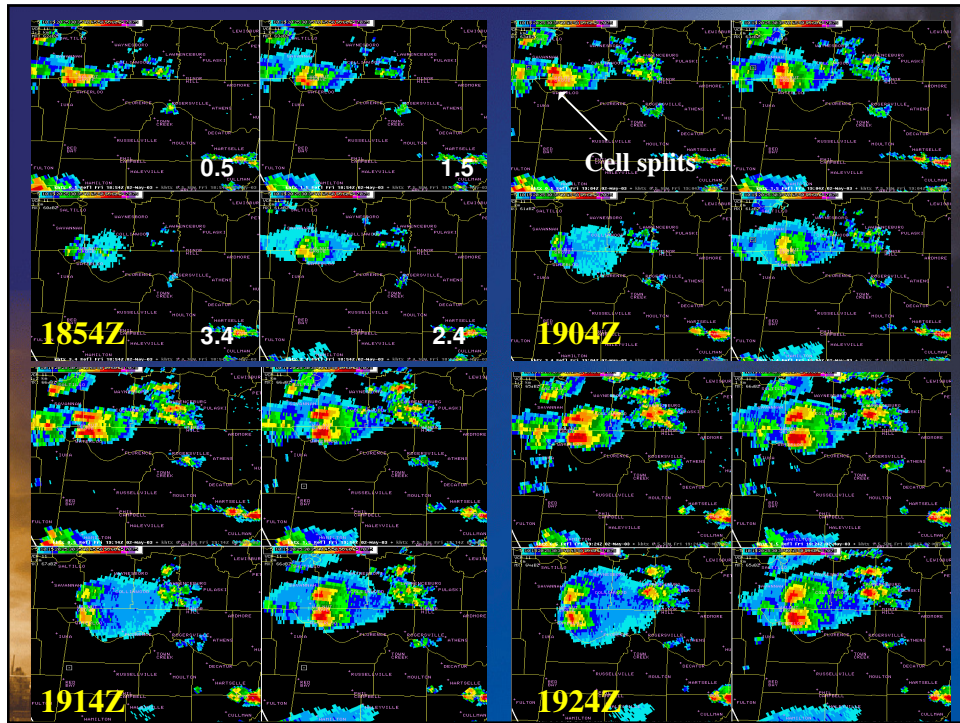
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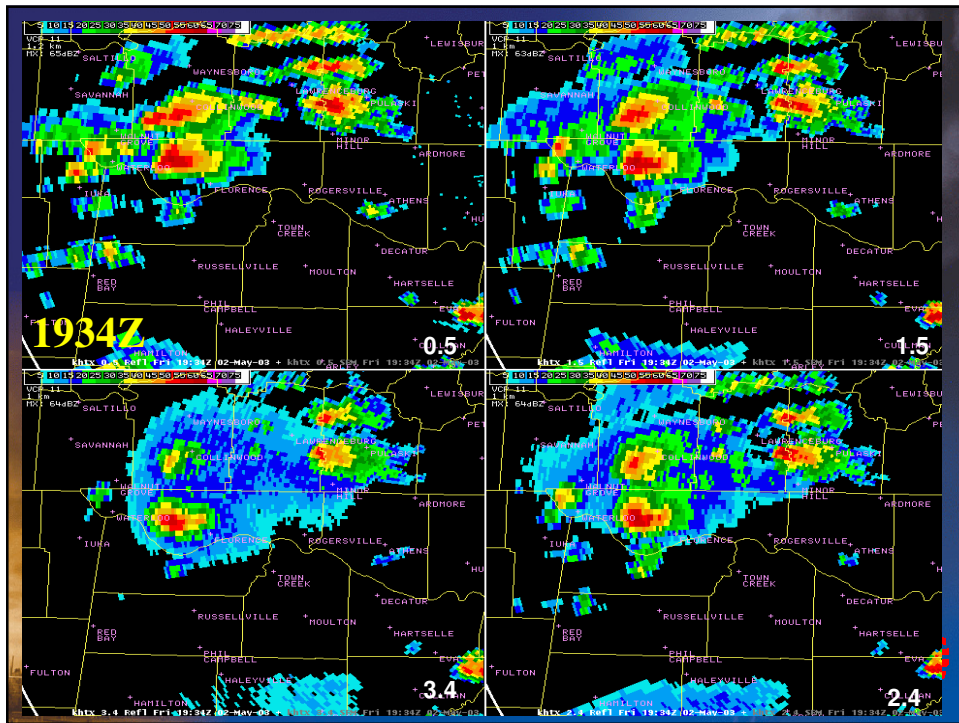
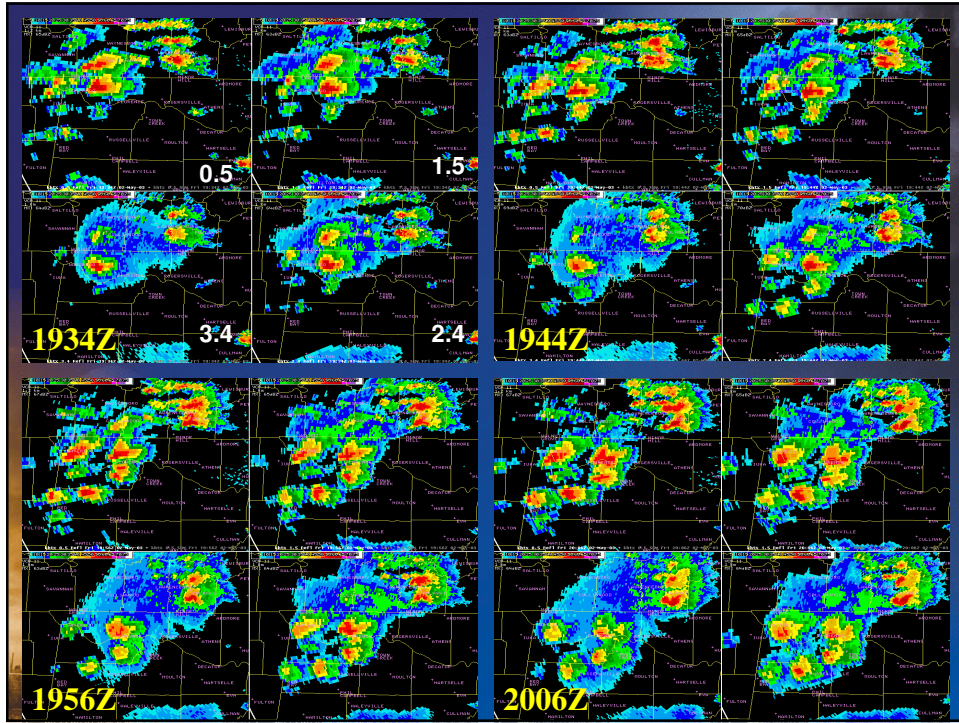


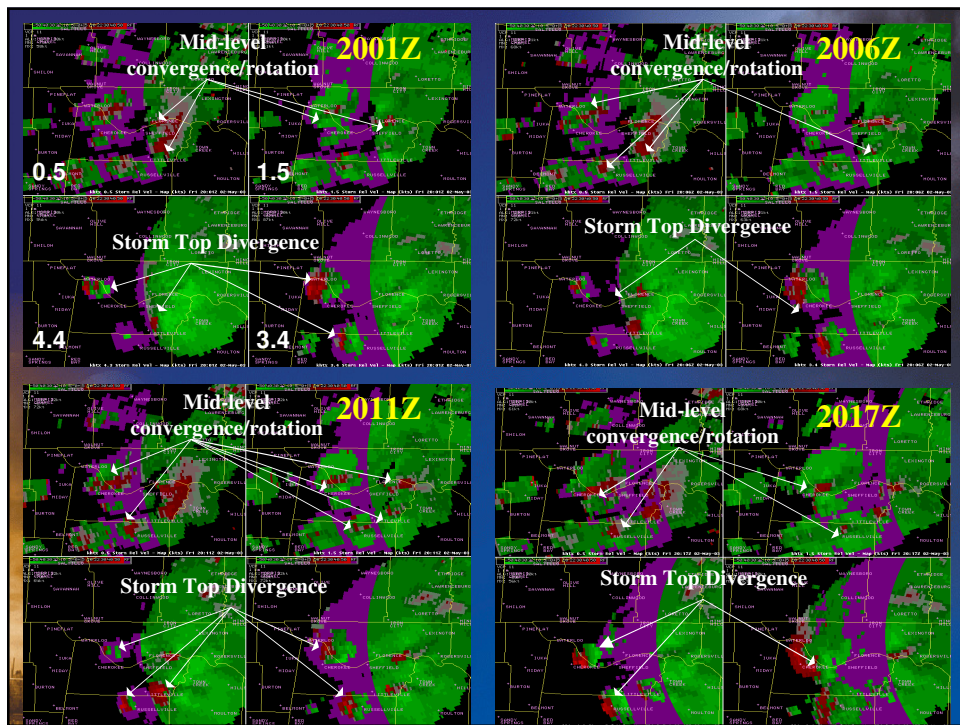
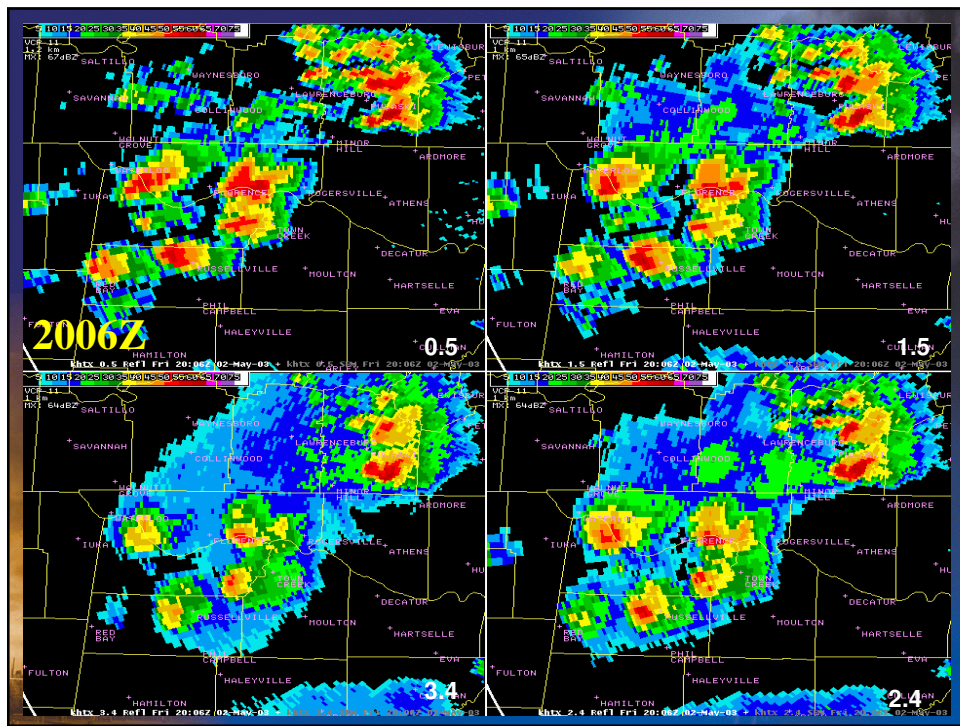


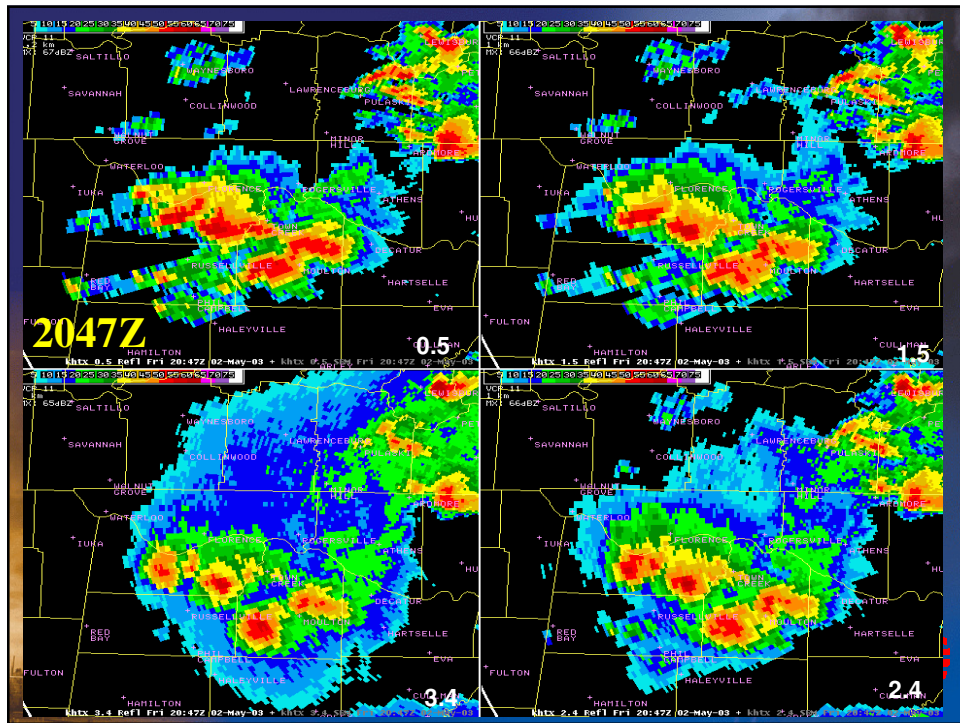
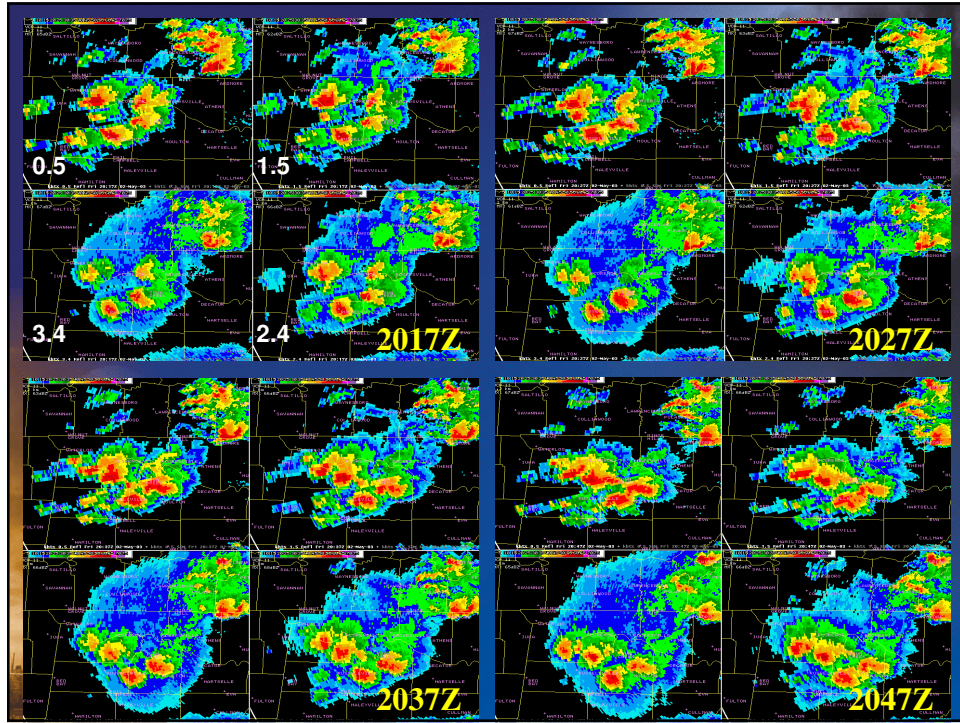


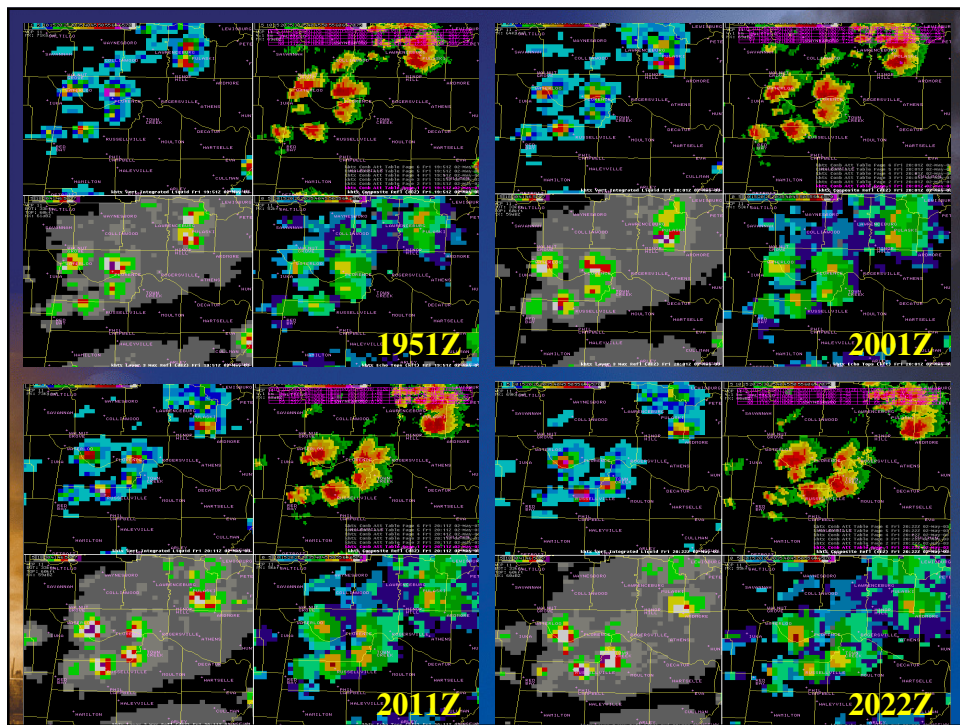
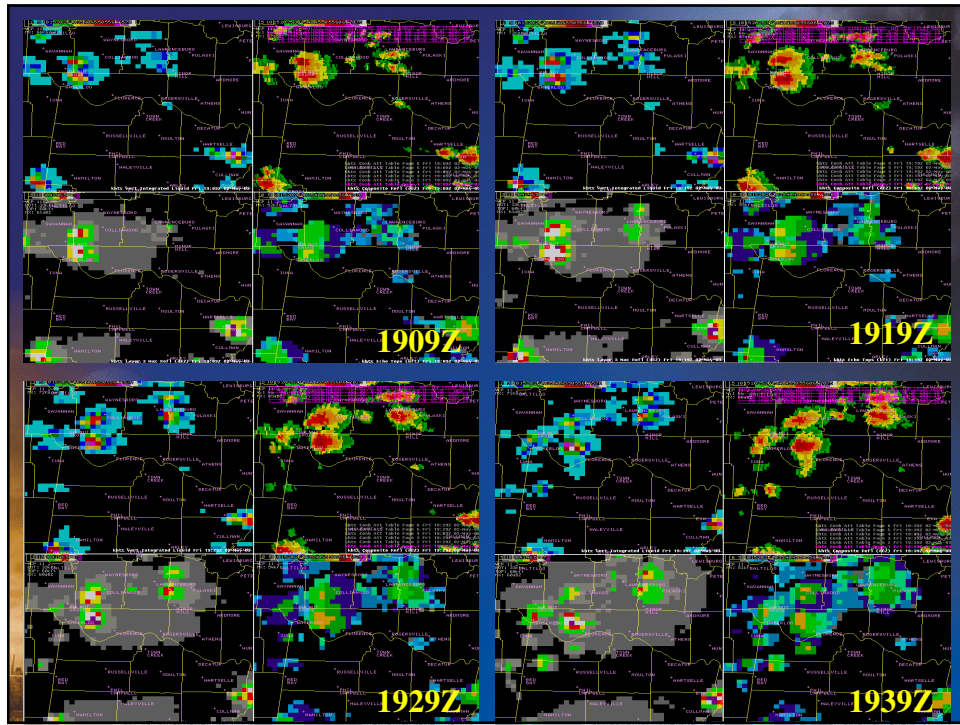








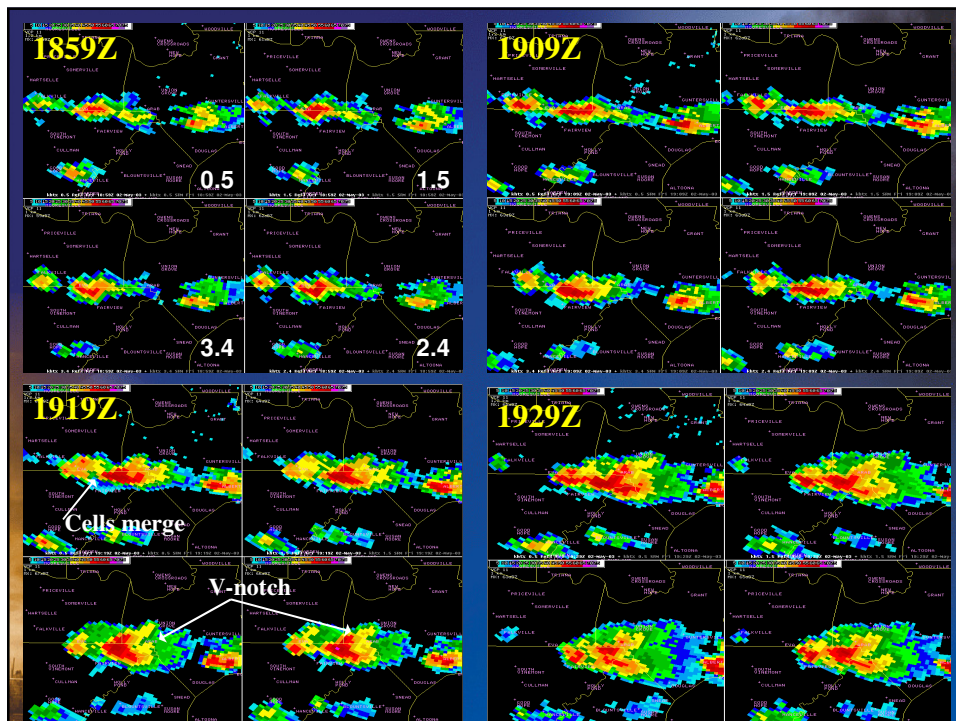




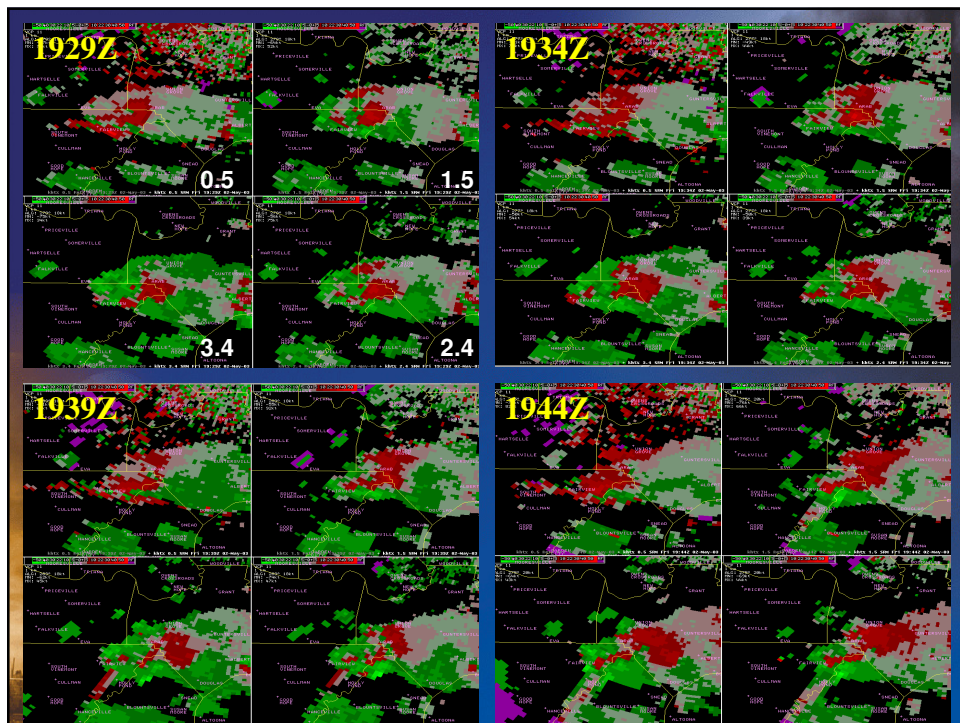
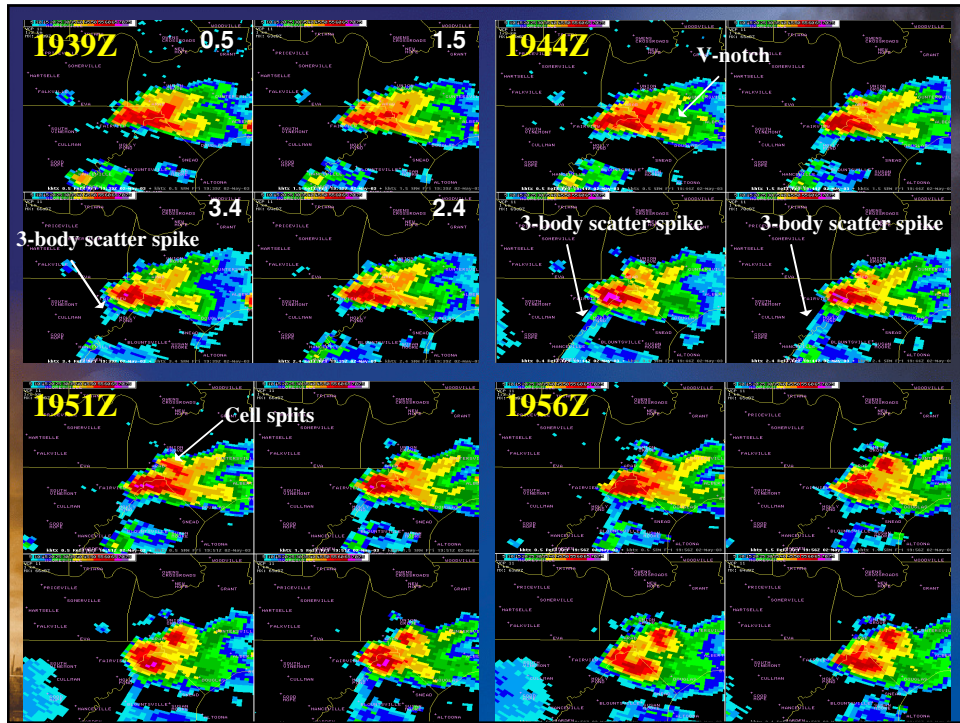
## Storm Focus #3 – Cullman/Marshall County

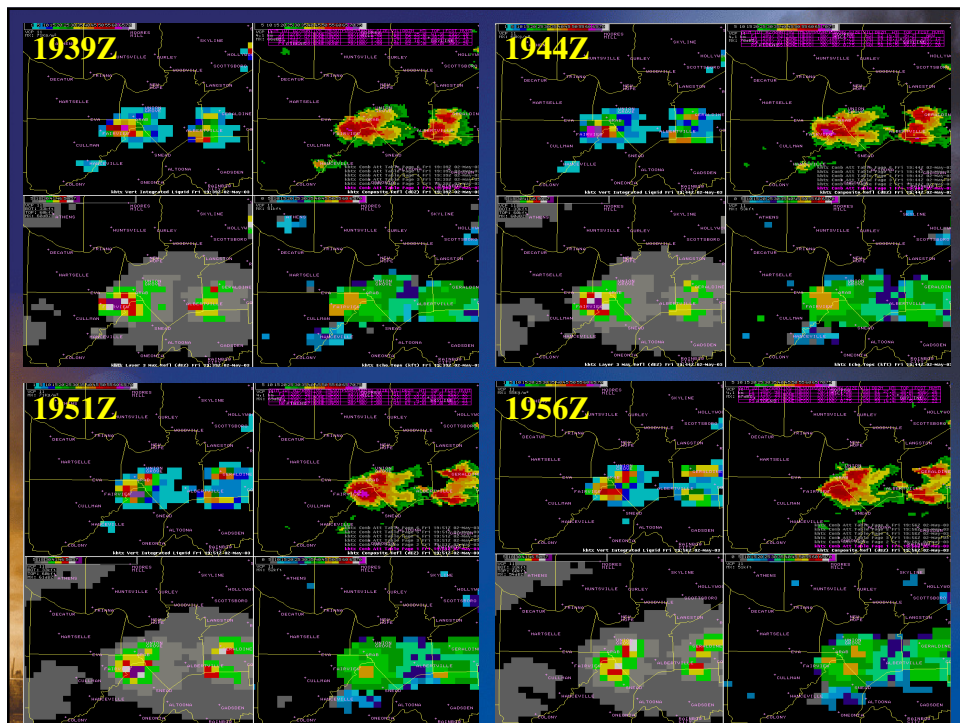
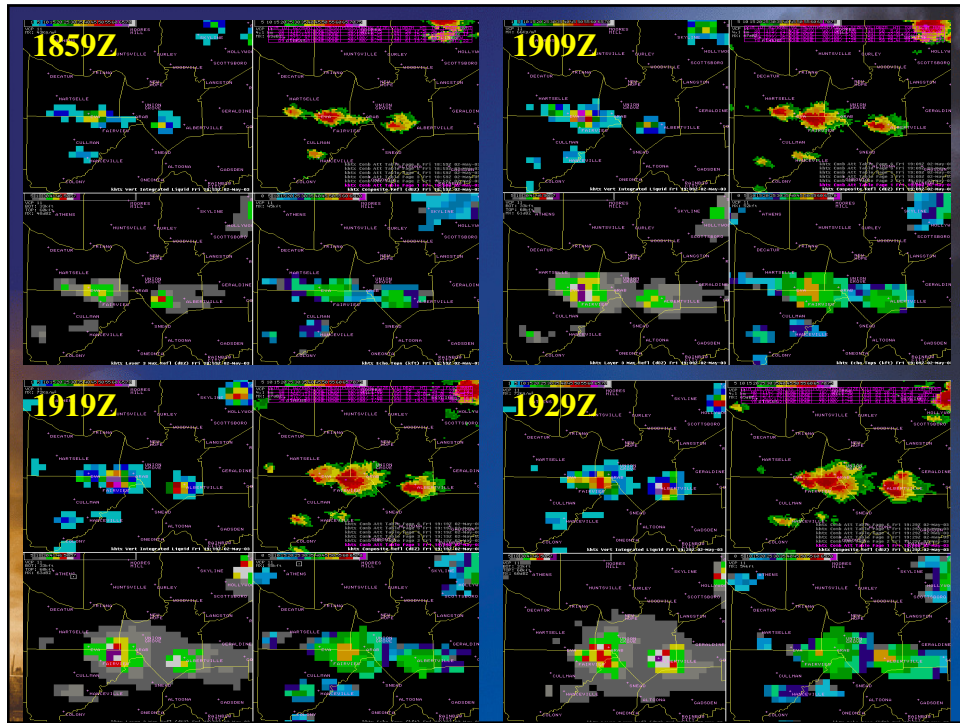
- Cells developed along surface trough
- Developed ahead of upper trough and associated speed max
- Exhibited classic V-notch and Three-body scatter radar signatures
- Produced tennis ball to baseball size hail

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# May 2, 2003 Hailstorm



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