

# Leveraging Total Lightning and Convective Initiation Data for Impact-Based Decision Support Services

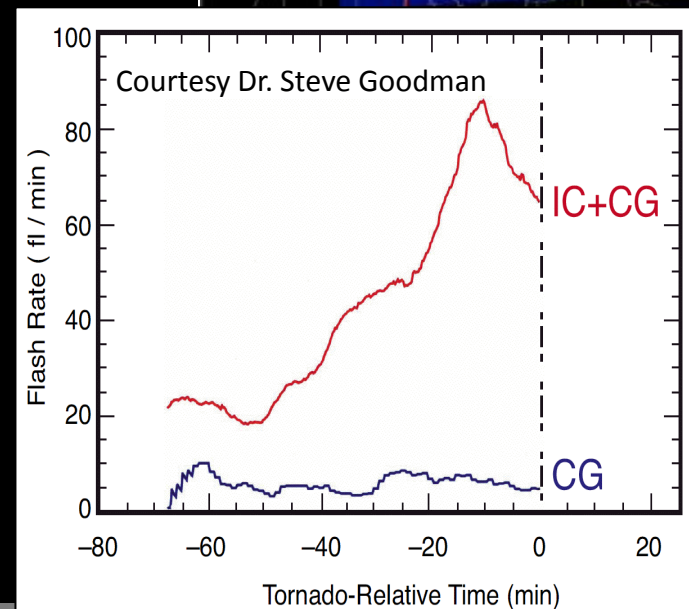
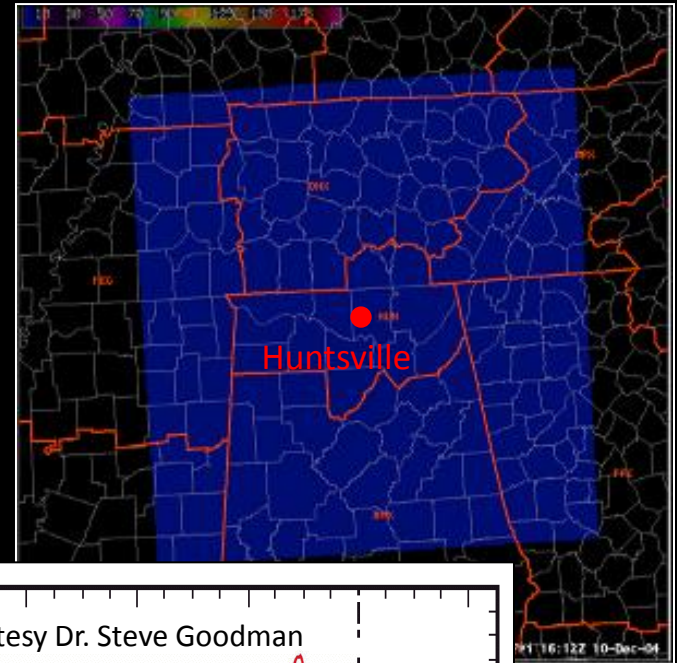
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WFO Huntsville, AL



HUNTSVILLE, ALABAMA

# Background – Total Lightning

- WFO HUN has a long history (~11 yrs) with SPoRT and Total Lightning from North Alabama Lightning Mapping Array
  - Convective Initiation from UAHuntsville off and on for ~8 years
- Traditionally used for severe weather detection



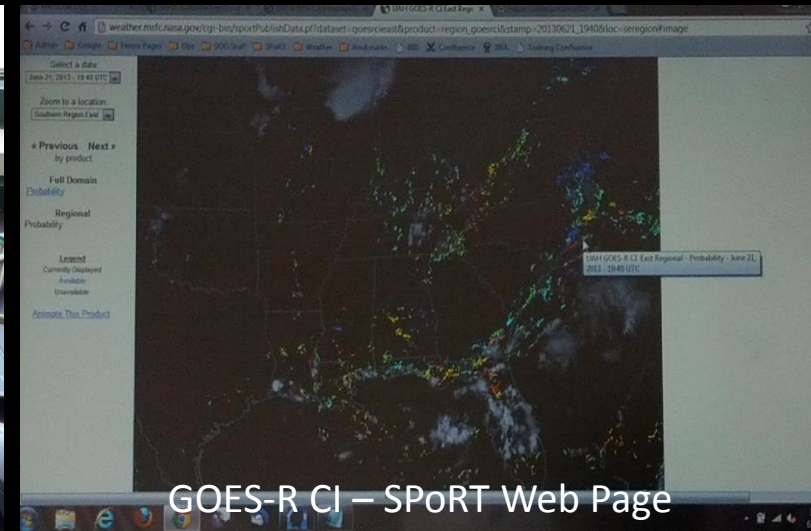
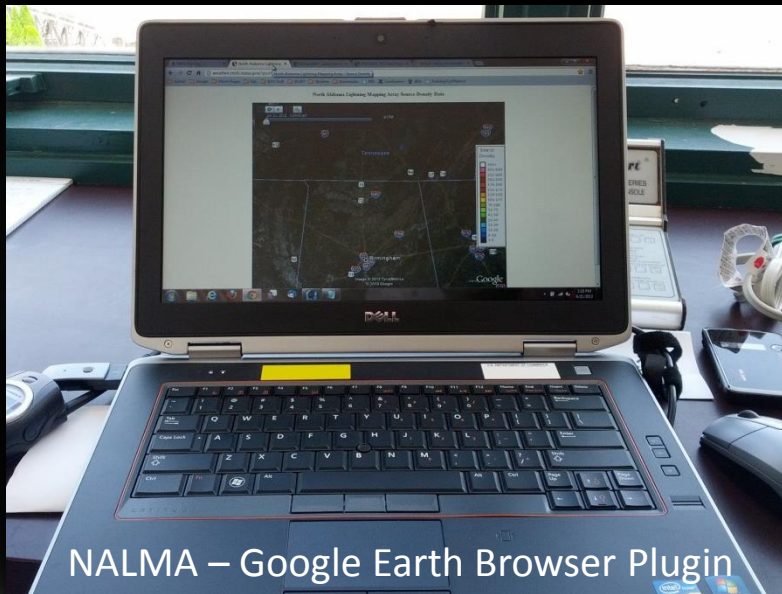
# Background – Decision Support

- HUN has a long history here too, but it has ramped up markedly in the last 2-3 years
  - 27 April 2011 event, recovery, anniversaries
- Work with EMA for protection of life & property



# On-Site IDSS with Unique Data

- AWIPS importance has changed due to IDSS
- SPoRT & UAH have been great about presenting their data in a (mostly) easily-accessible, web-friendly format



# Panoply

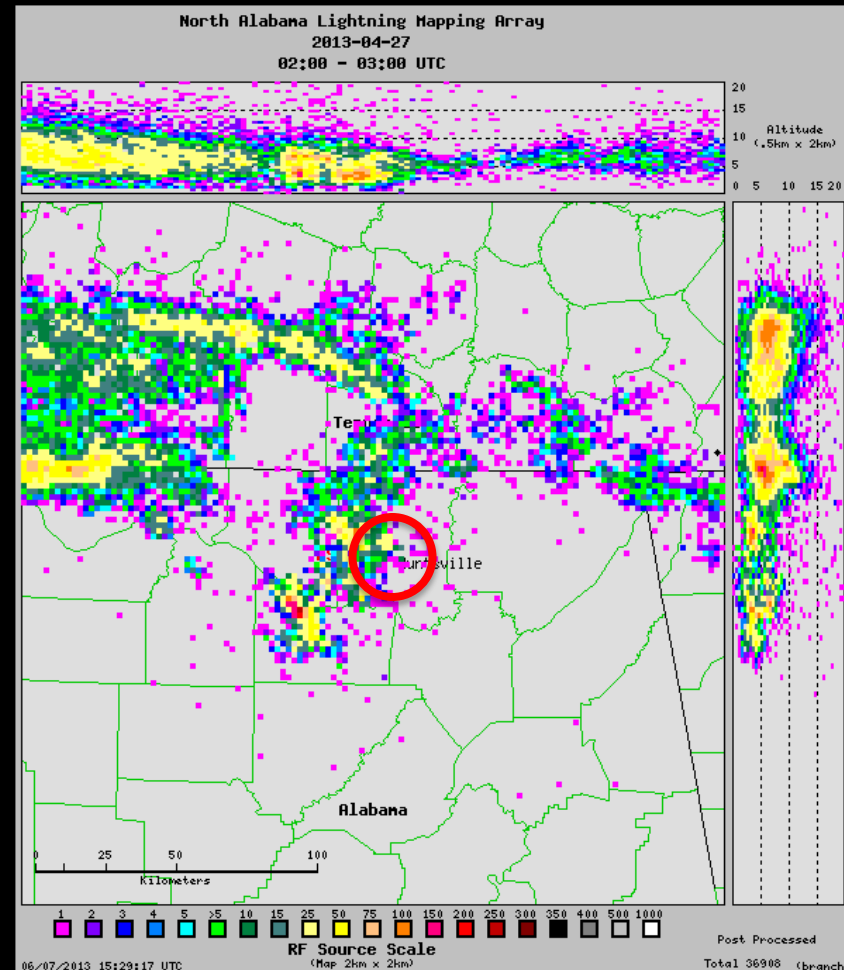


- Outdoor arts festival in downtown Huntsville, AL, late April
- Draws ~300,000 people over 2 ½ days
- *Strong* weather sensitivity
  - History of bad weather
  - One day shut down for tornadoes in 2010; completely shut down in 2011 (4/27 effects)



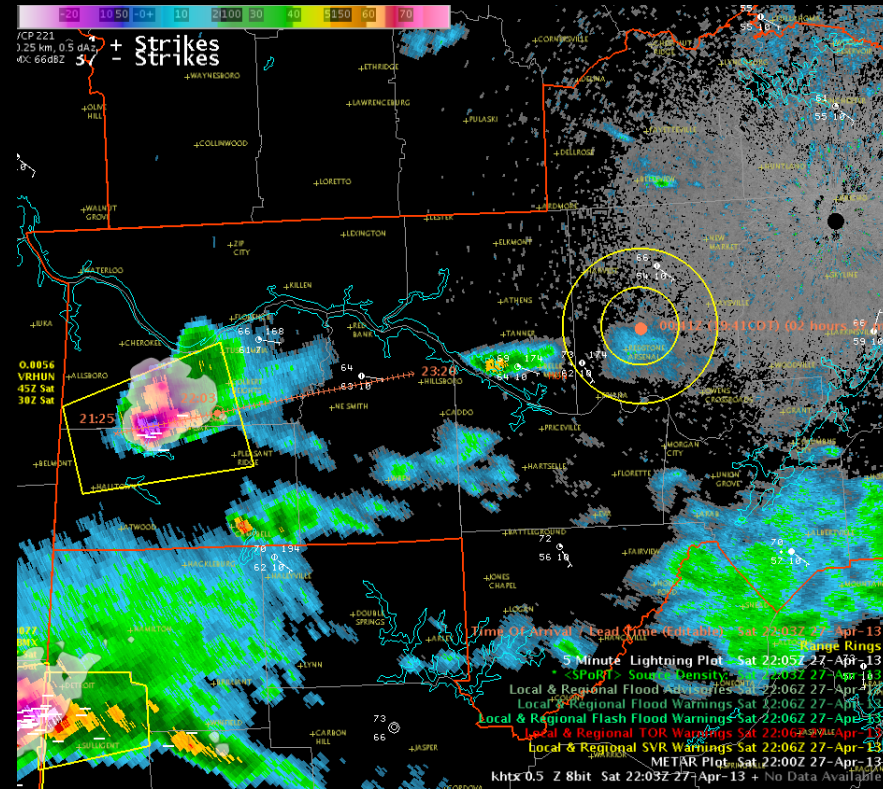
# Panoply 2013

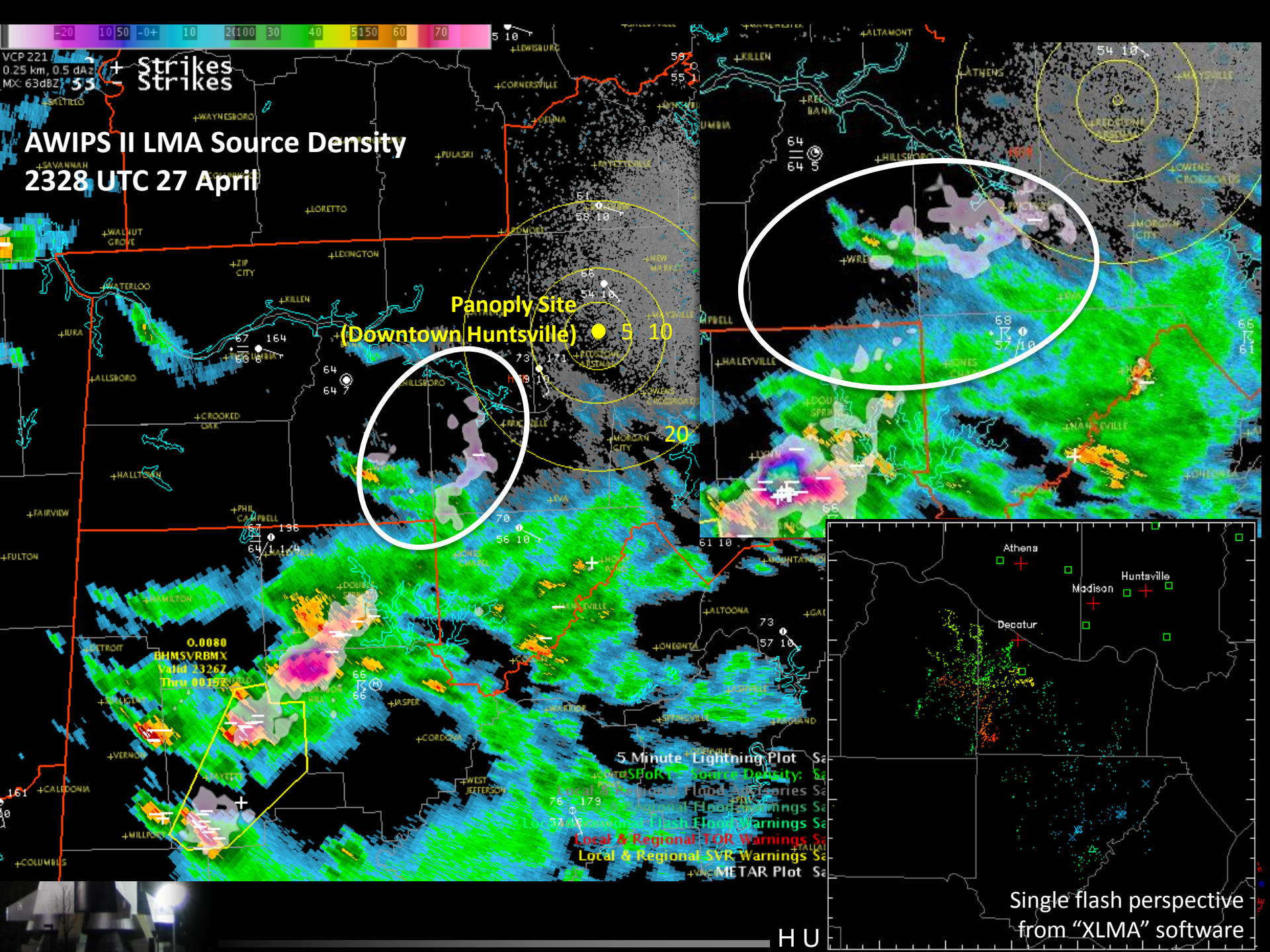
- First night – scattered showers/storms threatened
- NALMA data leveraged at WFO and on-site to determine threats
- Organizers accelerated closing fireworks show, but last few fireworks still coincided with lightning



# Panoply 2013

- New challenges Saturday (tornado watch, scattered storms) but no direct impacts aside from rain
- Extended anvils created a “long flash” risk in the evening
  - DSS met. at WFO conveyed to on-site staff







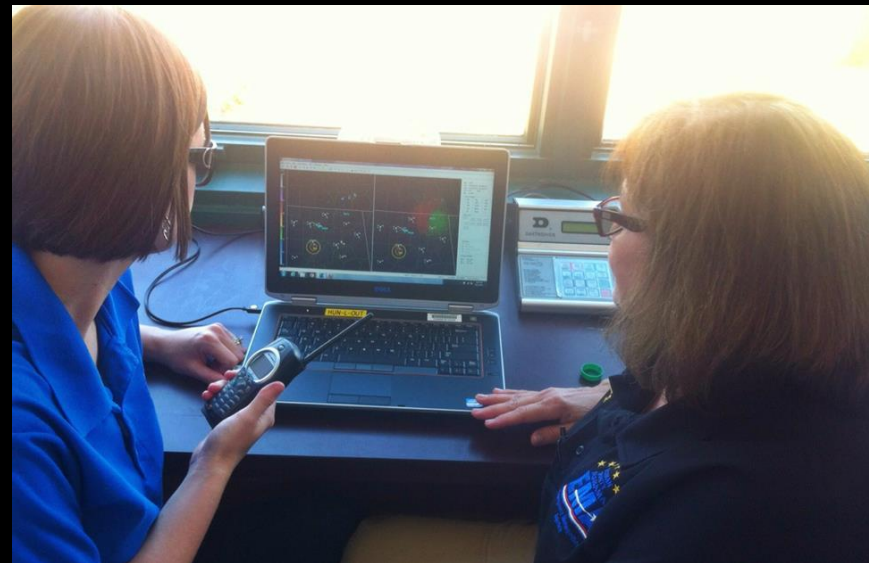
# Rock the South Concert

- Outdoor concert in Cullman, AL
  - Originally designed to support victims of April 27 outbreak; now set in June (active convective season)
  - ~40,000 attendees over 2 days
  - Heightened sensitivity after Indiana State Fair



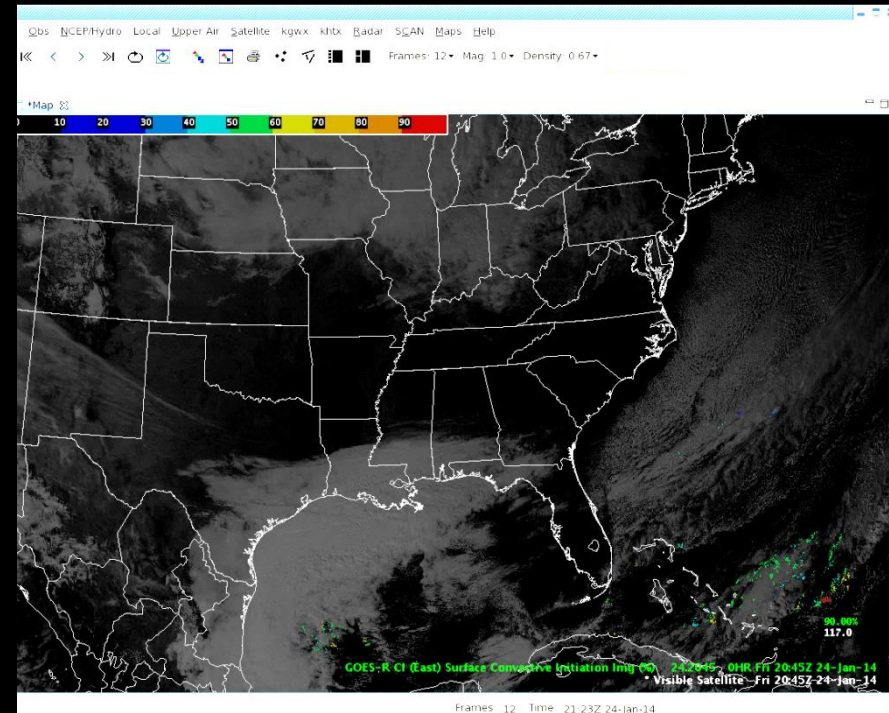
# Rock the South Concert

- CI permitted anticipation
  - Important to realize CI goals (35 dBZ, NOT CGs)
- Looked for any total lightning signals, not just the jump
- Fortunately, activity was very isolated



# The Next Step?

- AWIPS II “Thin Client” could be a game-changer for DSS
- HUN testing on a “low-grade” level inside the WFO
  - GOES-R CI easily available (Grib2), Total Lightning not quite yet
  - Hasn’t been a top priority yet due to prolonged OT&E, but will increase in importance with increased IDSS



# Questions?

- [Brian.Carcione@noaa.gov](mailto:Brian.Carcione@noaa.gov)
- Web Sites:
  - NALMA Google Earth Plugin (also for DCLMA)
    - <http://weather.msfc.nasa.gov/sport/lma/nalmaSourceDensity.html>
  - GOES-R CI:
    - UAH: <http://nsstc.uah.edu/SATCAST/>
    - SPoRT: <http://weather.msfc.nasa.gov/cgi-bin/sportPublishData.pl?dataset=goesrcieast>

