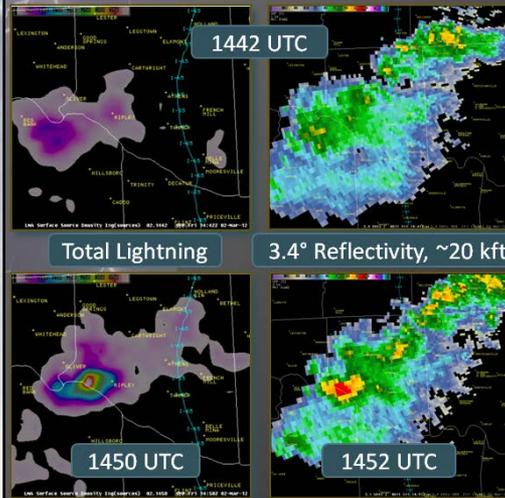


Training Issues

A Quick Review



Total Lightning

- Observes intra-cloud (IC) and cloud-to-ground (CG) lightning (1-2 min updates)

Physical Reasoning

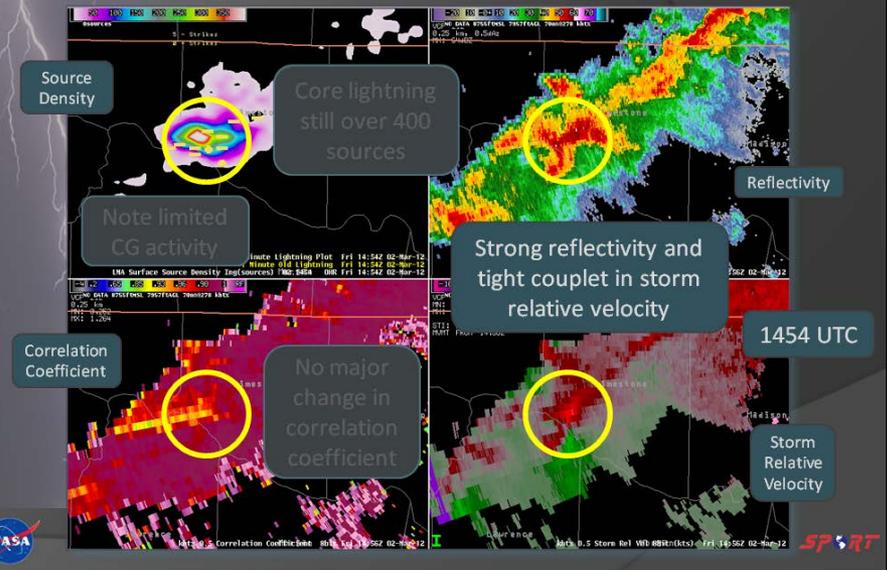
- Driven by updraft in mixed phase region (above -10°C isotherm)
- Stronger, deeper updrafts
 - More lightning

Application

- Increase in total lightning signifies strengthening updraft
- Important for severe weather and lightning safety

- Introduce the topic
- Relate to existing tools / or conceptual models
- Stay short and focused

The Lightning Jump



- Illustrate with operational examples
- Opportunity for end user contributions

Training Issues

The Pseudo GLM in N-AWIPS

Available under:

Data -> Image ->
Sat -> Ima ->
pgImFlashExtent

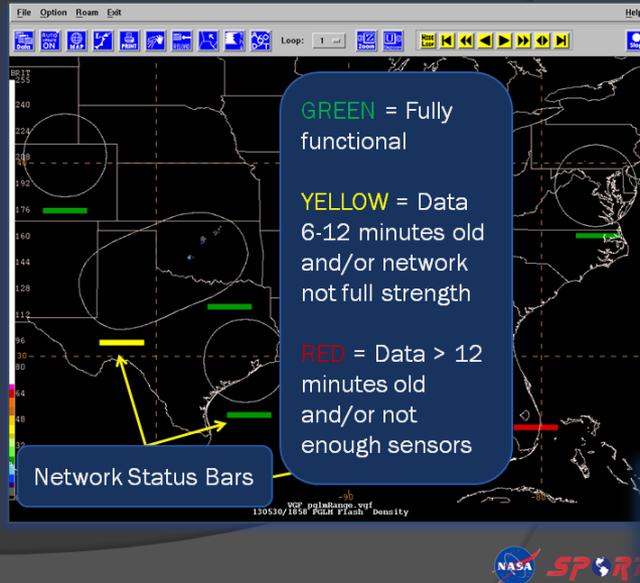
Range rings

Lightning Mapping
Array ranges

Network status bars

Quickly identify if
network is active

Identify no data
versus data outage



- Know the end user
- Local WFO vs. National Center
- Understand operational needs

The AWIPS II Total Lightning Trending Tool

Initial tool started by SPoRT and WFO Huntsville

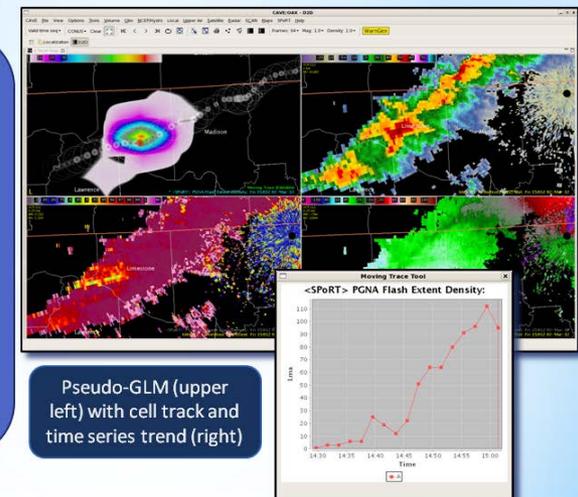
Applicable to regular and pseudo-GLM products

Forecaster manually selects storms to track

Now part of larger collaboration with MDL

Meteorogram trace tool

Time series of many meteorological observations



- Support supplemental material and tools
- Often can be shorter in length

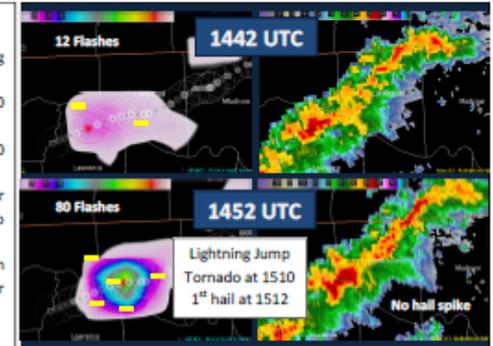
Training Issues

- Quick Guides offer easy, on the spot reviews
- Support end user's learning system
- Preparation for “hands on”, such as WES
- SPoRT Modules
 - Total Lightning Review
 - Operational Examples
 - Hazardous Weather Testbed
 - National Center Perspective
 - Total Lightning Tracking Tool

Operational Uses (cont.)

Lightning Jumps and Severe Weather

- Most common use of total lightning observations.
- Lightning jumps are large and rapid (within 10 minutes) increases of total lightning.
- Often precede severe weather by 10-20 minutes on average.
- Lightning jumps often “tip the scales” for forecasters determining whether or not to issue a warning.
- Provides situational awareness of which storms are strengthening / weakening or possibly becoming severe.
- Provides warning decision support.



Spatial Extent of Lightning Flashes

- Total lightning is not a point source and provides a better observation of the lightning threat.
- Most lightning remains within 10 miles of the core of a thunderstorm.
- Some flashes may extend many tens of kilometers.
- Visualization of total lightning can be used to demonstrate lightning's threat and the importance to remain indoors for 30 minutes after the last lightning strike was seen or heard.

Resources

Operational applications of total lightning can be seen on the Wide World of SPoRT blog (<http://nasasport.wordpress.com/>). Training on what is total lightning and operational uses can be found on the SPoRT web page (<http://weather.msfc.nasa.gov/sport/lma/>, <http://weather.msfc.nasa.gov/sport/goesrpg/pglm.html>, and <http://weather.msfc.nasa.gov/sport/training/>). These training modules also are available on NOAA's Learning Management System.

PGLM Quick Guide Example