

# Convective Initiation and the North American Monsoon

Brian Guyer / Deirdre Kann

NWS Albuquerque

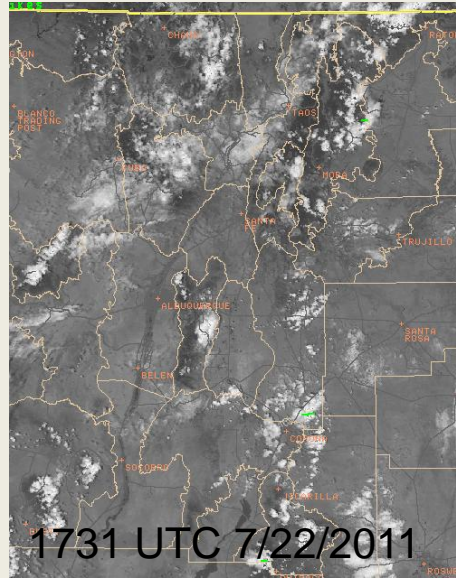
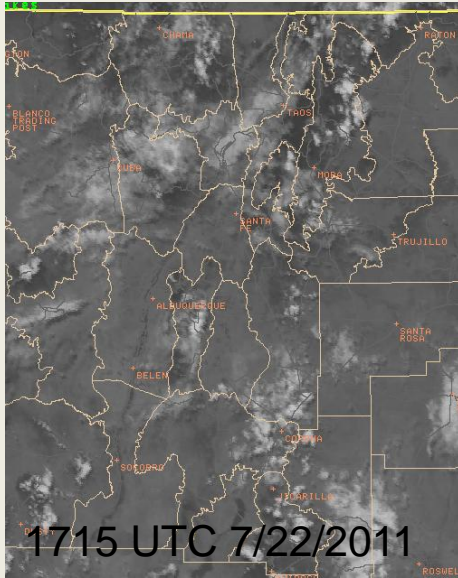
August 31, 2011

## Table and Brief Overview of Experiment July 6 - August 15 2011

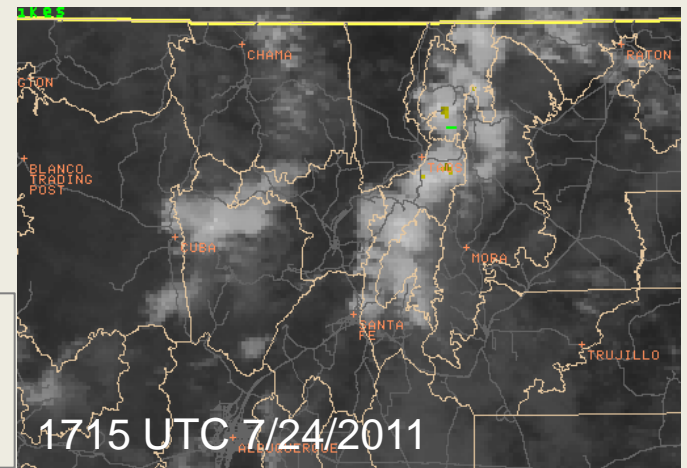
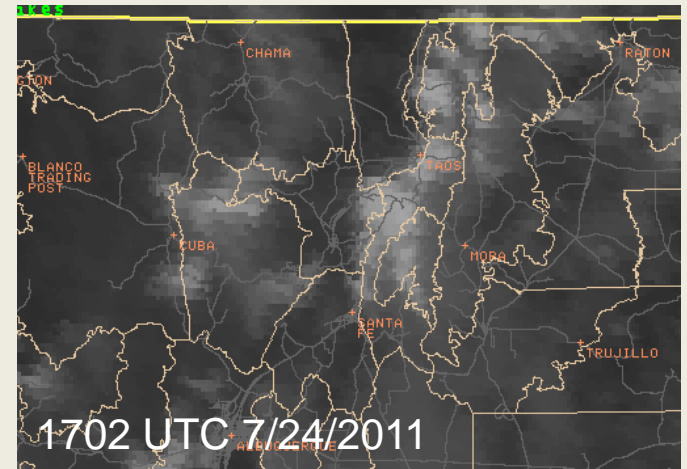
PRODUCT	UTILITY
NASA SPoRT Hybrid Infrared	-31C & Very Cold Cloud Top Detection
NASA SPoRT Hybrid Visible	Cumulus Detection / Hires Cloud Feature
Composite Reflectivity	Cell Tracking
NLDN Lightning	First Strike Detection 5min / 15min
UW/CIMMS Convective Initiation	Categorical CI Detection
NSSL WRF	Probabilistic CI Forecast
ABQ NWS WRF	Probabilistic CI Forecast (GFE)
CIRA Blended TPW	Gradients of Precipitable Water
GFE NLDN Lightning Grids	Spatial Convective Forecast
USGS StreamFlow Monitor	Monitor Diversion Channel Flow
Matt Bunker Precipitable Water	Climatology Database

# NASA SPoRT Hybrid Visible and Infrared

## VISIBLE



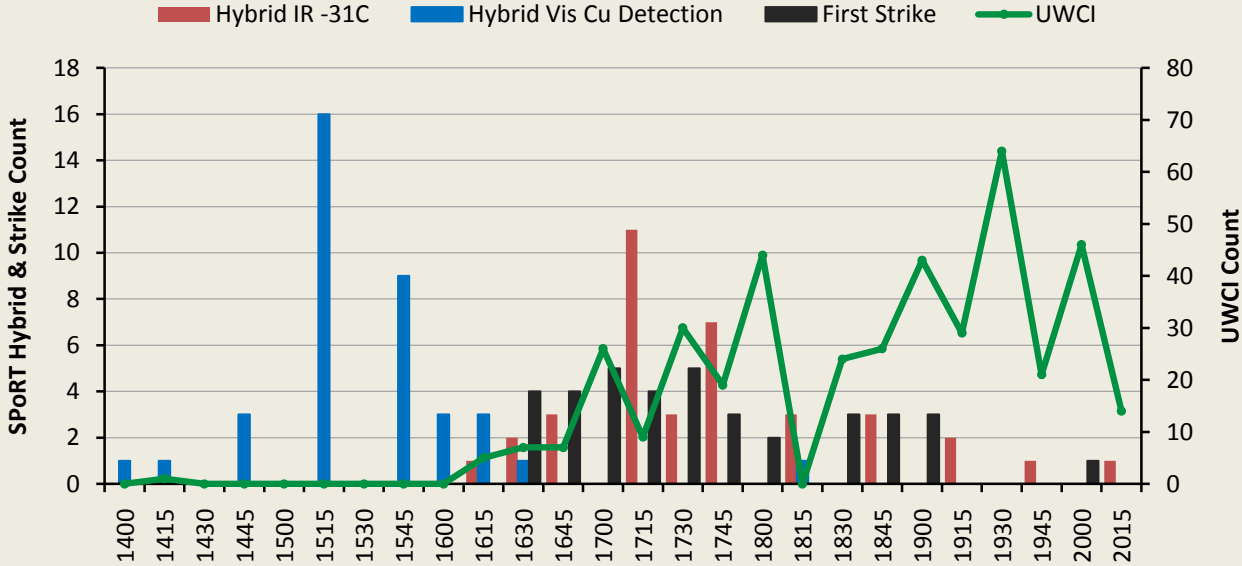
## INFRARED



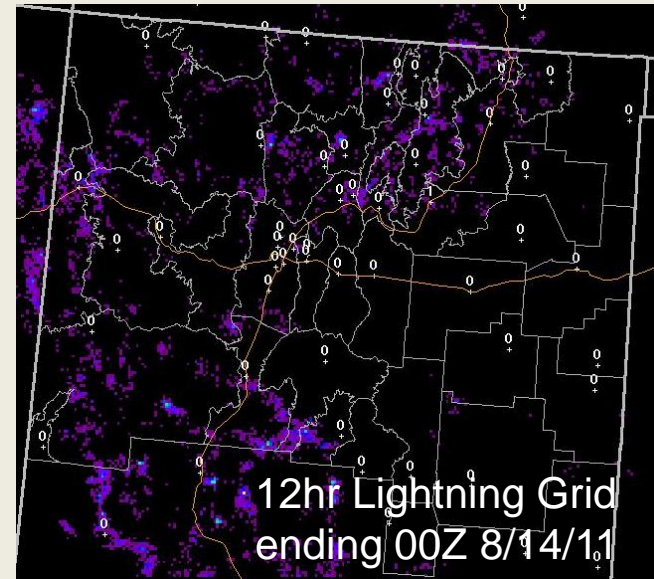
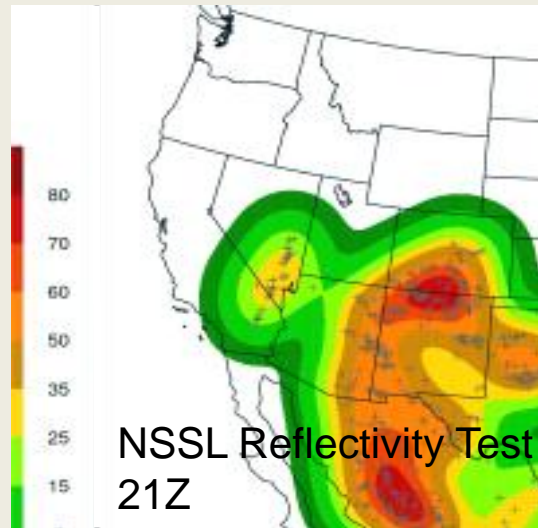
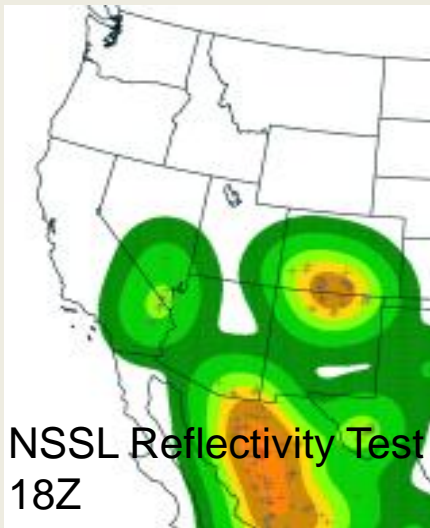
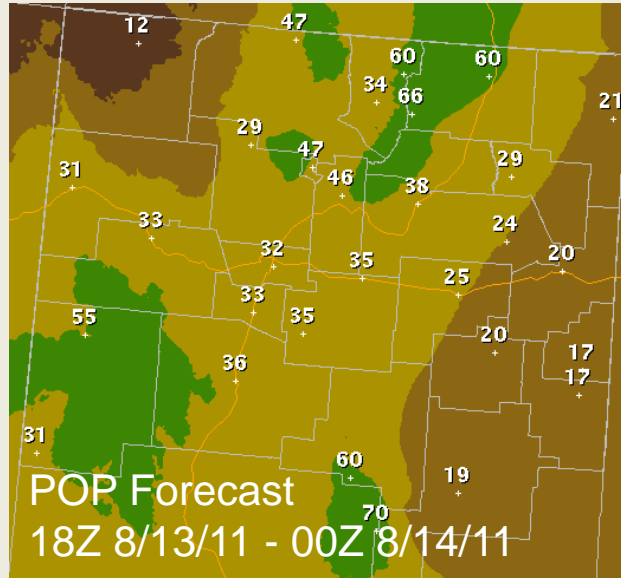
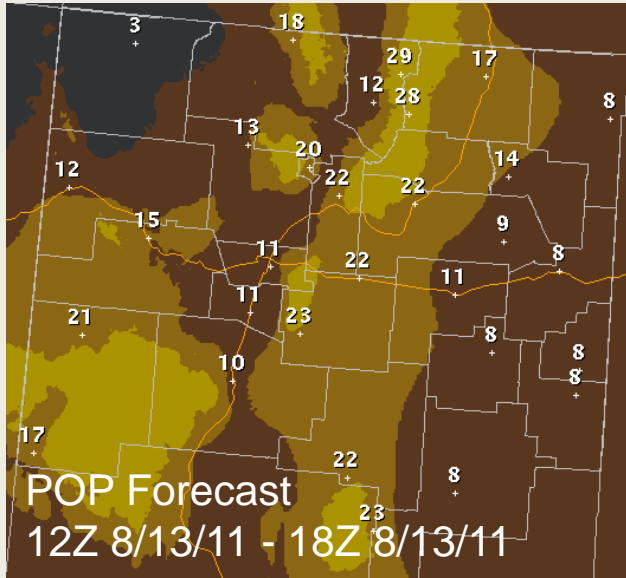
-31C detection on SPoRT infrared was coincident with 71% of the first strikes and 32% of those images were a hires composite.

# Convective Initiation Distribution

**SPoRT Hybrid IR -31C & Vis Cu Detection / First Strike / UWCI**  
**July 6 - August 15 2011**



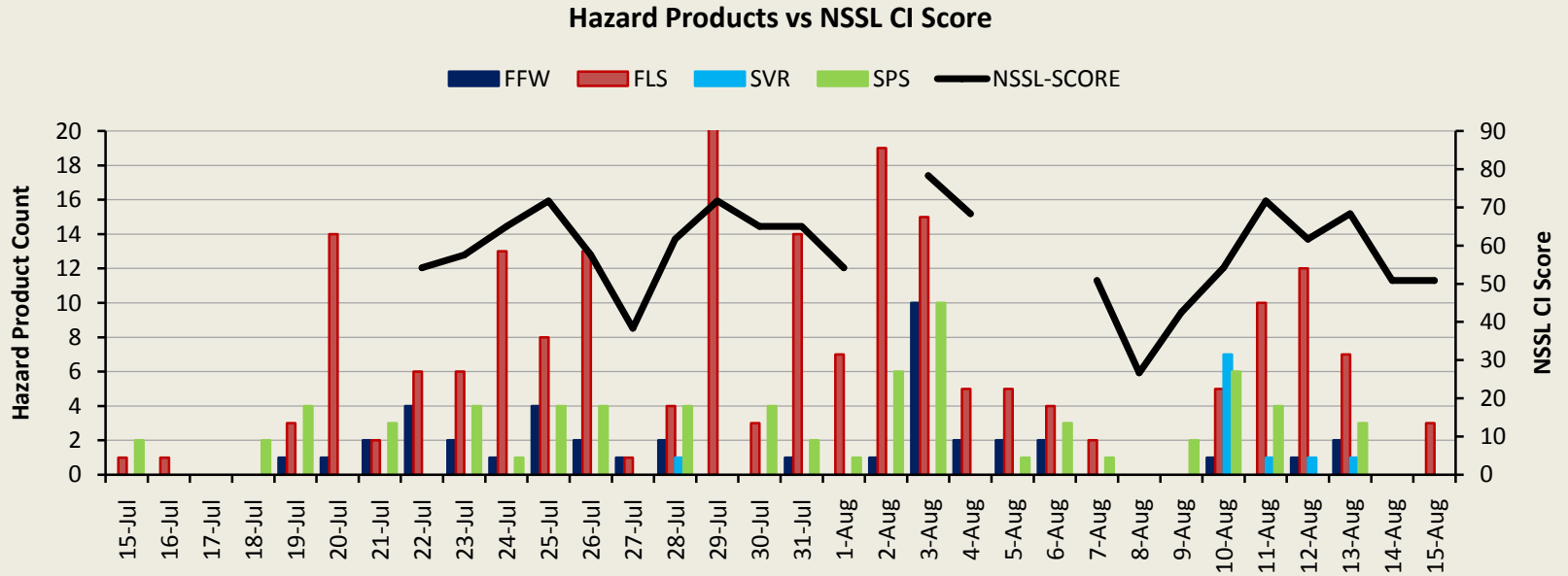
# Convective Forecast August 13, 2011



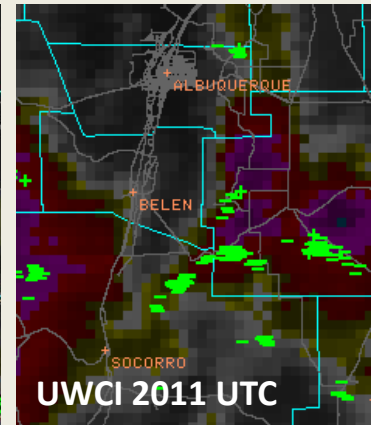
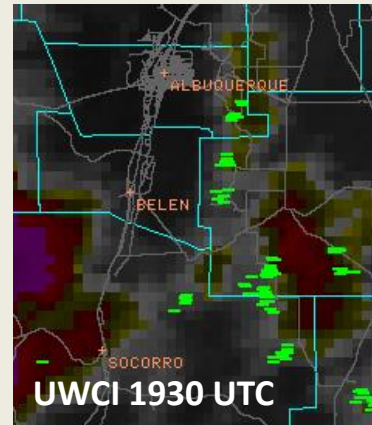
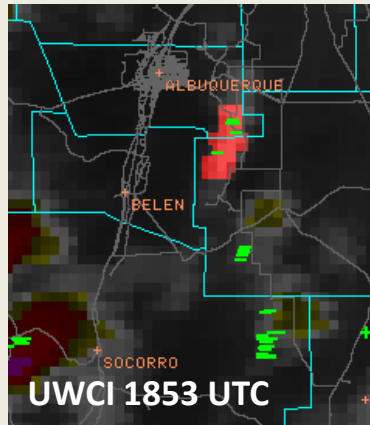
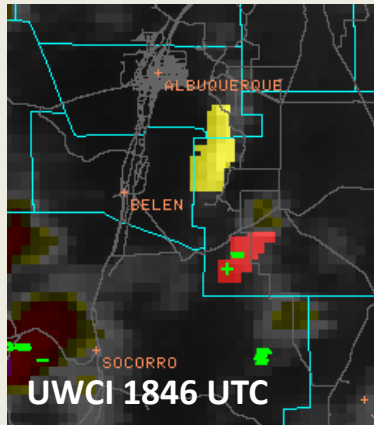
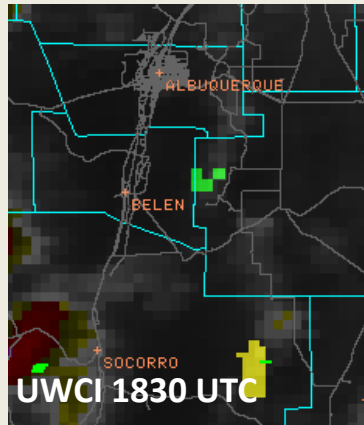




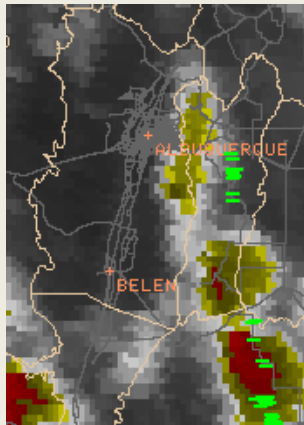
# Product Distribution



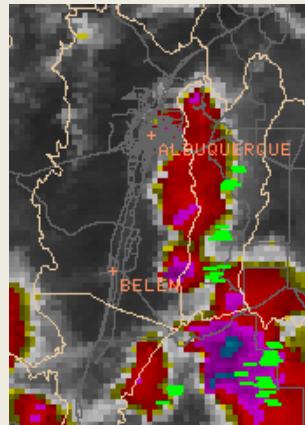
August 3, 2011  
SPoRT/UWCI Combination Case  
Flash Flood Warning Central NM



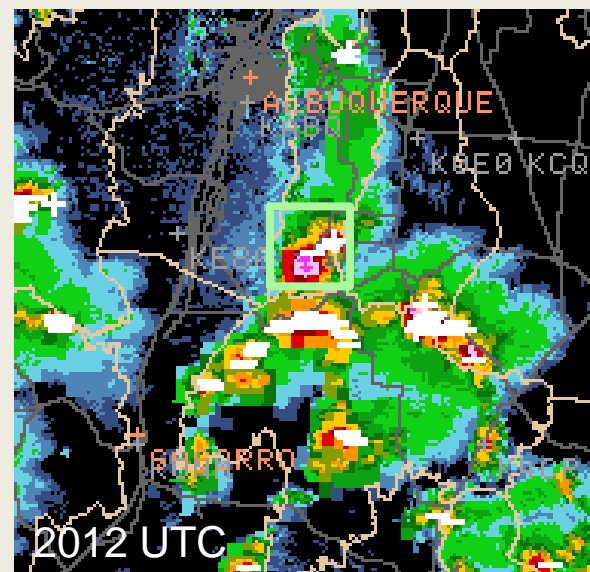
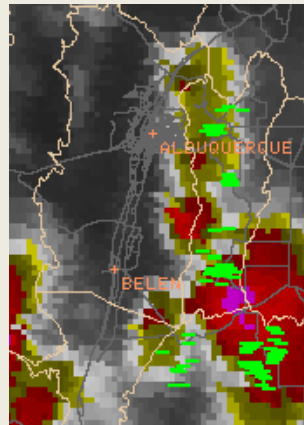
Hybrid IR  
1915 UTC



Hybrid IR  
1932 UTC

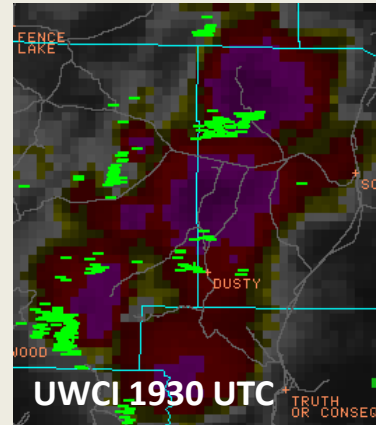
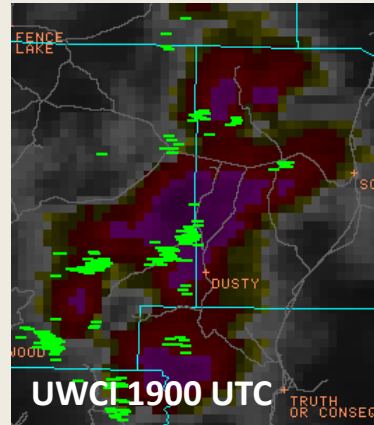
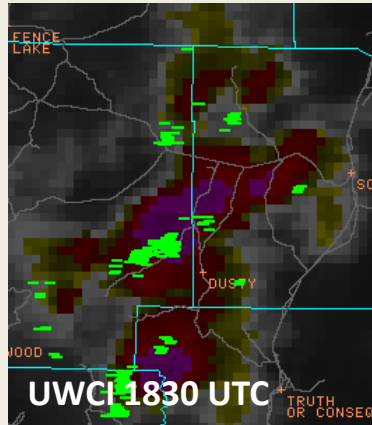
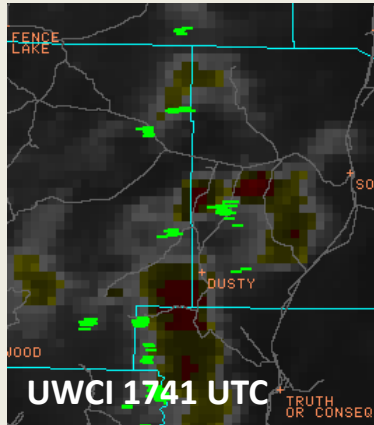
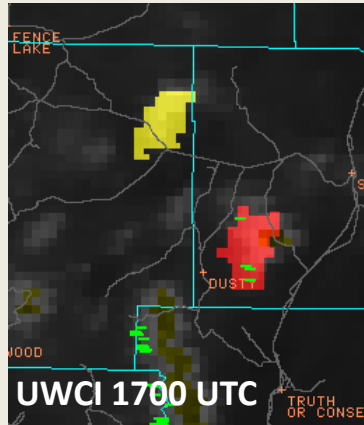


Hybrid IR  
1945 UTC

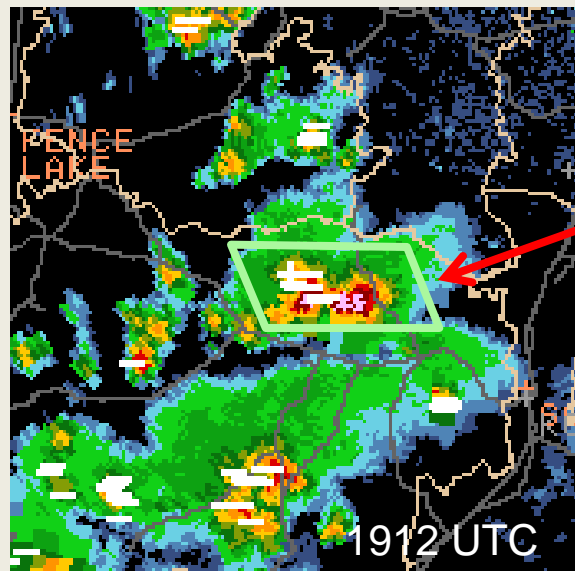
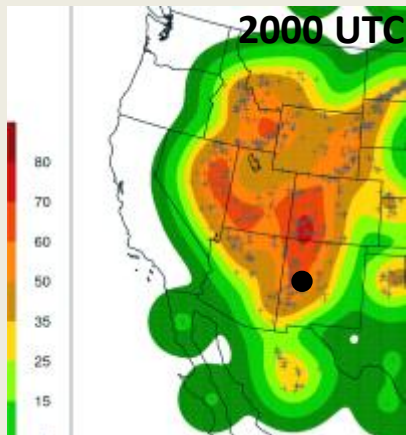




# August 3, 2011 SPoRT/UWCI Combination Case Flash Flood Warning Southwest NM



## NSSL Reflectivity Test

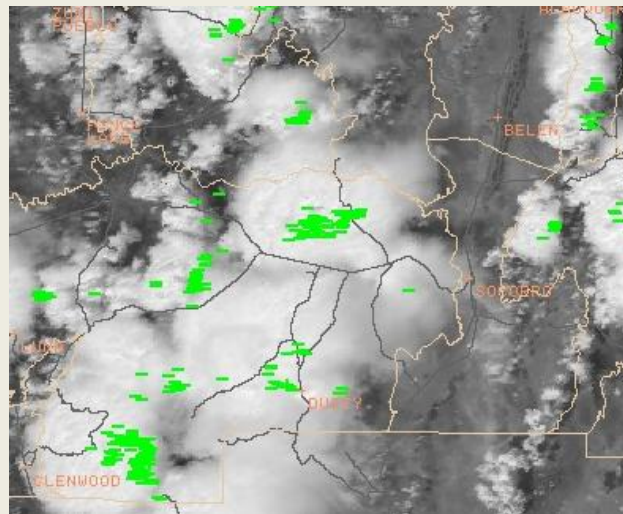
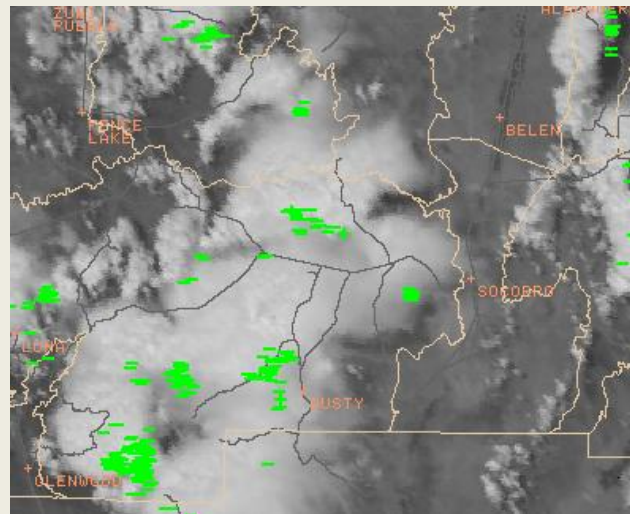
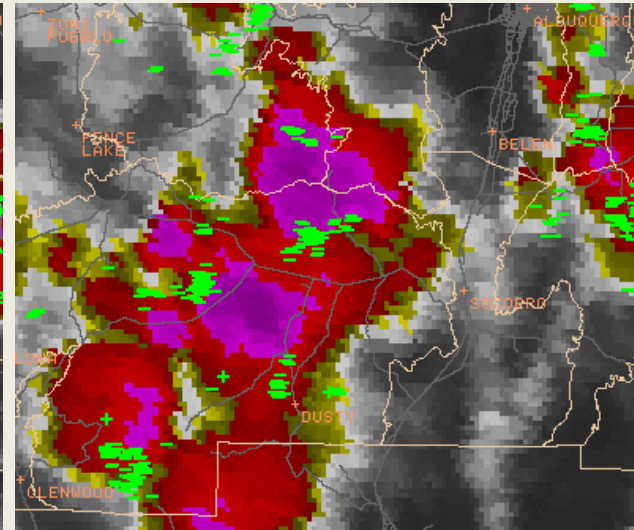
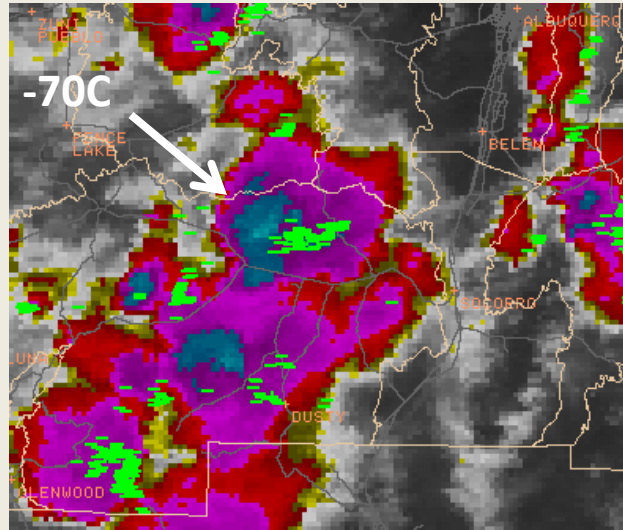
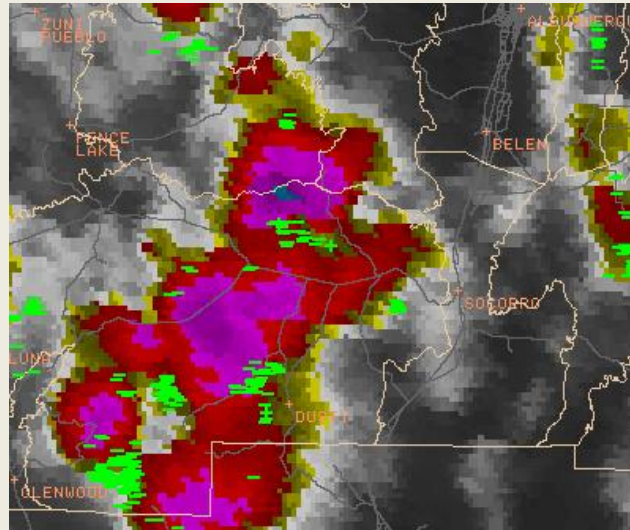


August 3, 2011  
SPoRT/UWCI Combination Case  
Flash Flood Warning Southwest NM

SPoRT Hybrid 1915 UTC

SPoRT Hybrid 1932 UTC

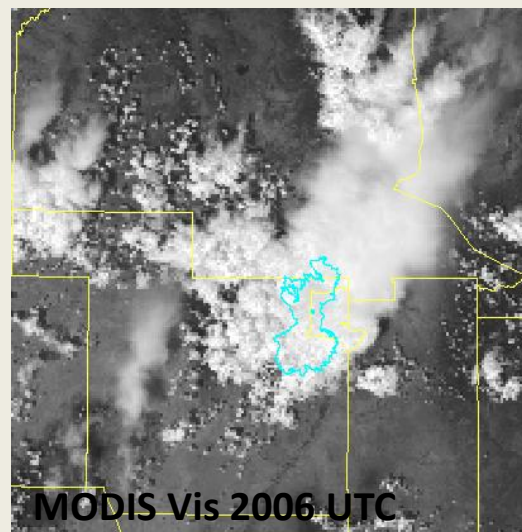
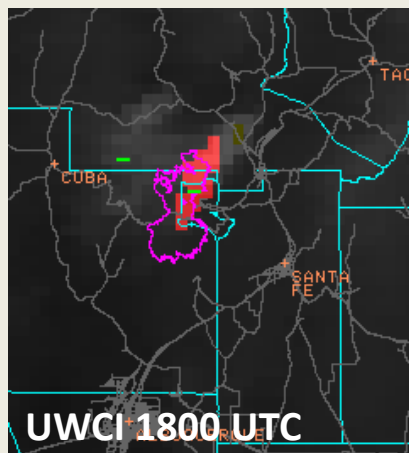
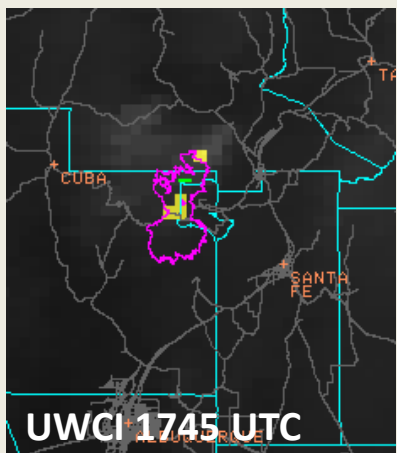
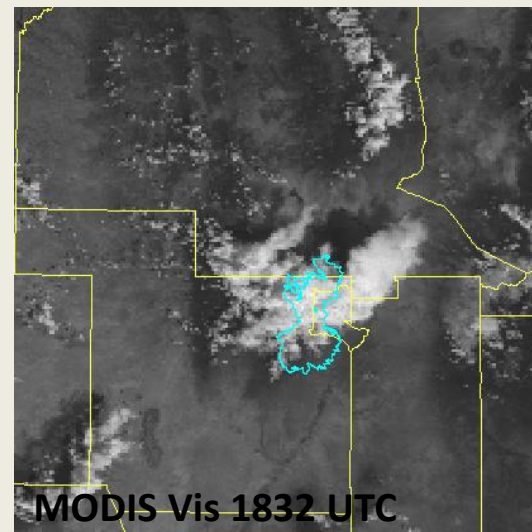
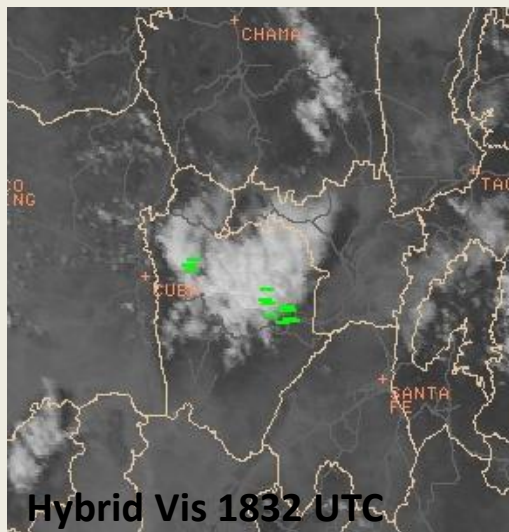
SPoRT Hybrid 1945 UTC



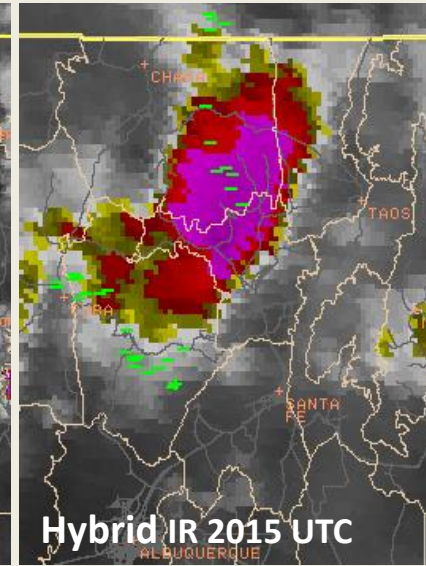
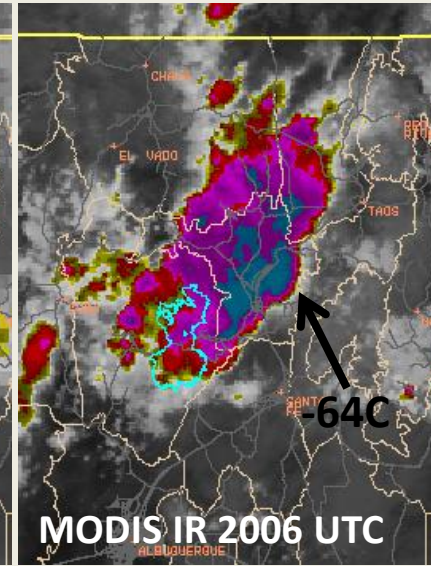
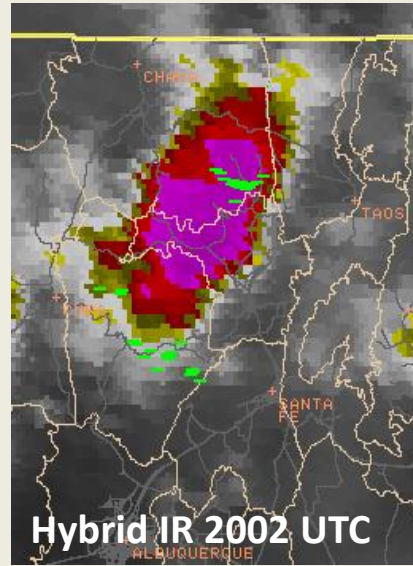
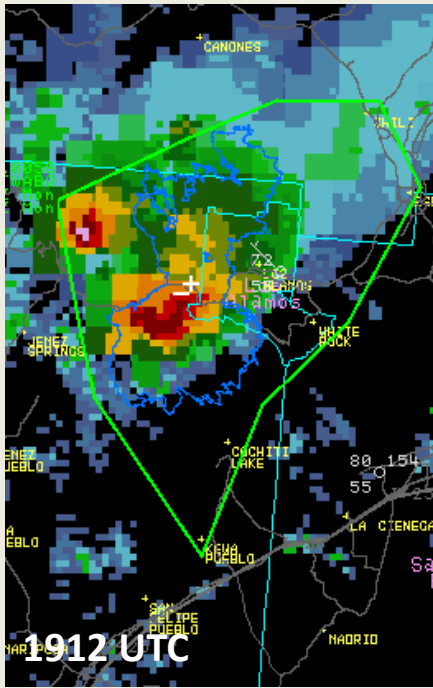


August 22, 2011  
UWCI/ SPoRT Combination Case  
Flash Flood Warning Las Conchas Fire

Hybrid Vis Loop 1632 – 1832 UTC



August 22, 2011  
UWCI/ SPoRT Combination Case  
Flash Flood Warning



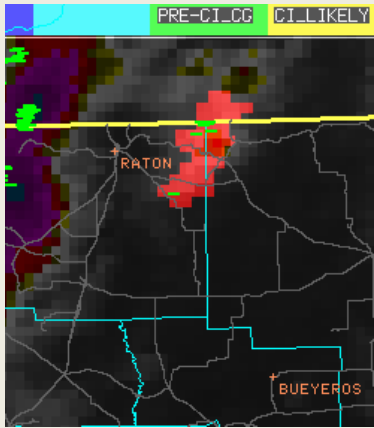
Peralta Canyon



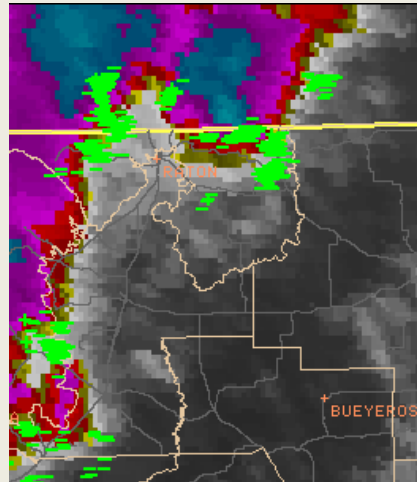
July 28, 2011

# SPoRT/UWCI Combination Case Flash Flood Warning Northeast NM

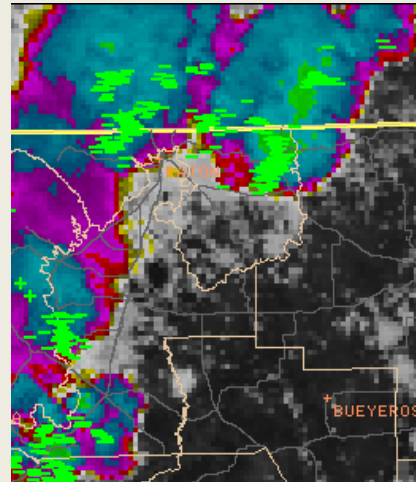
UWCI 1900 UTC



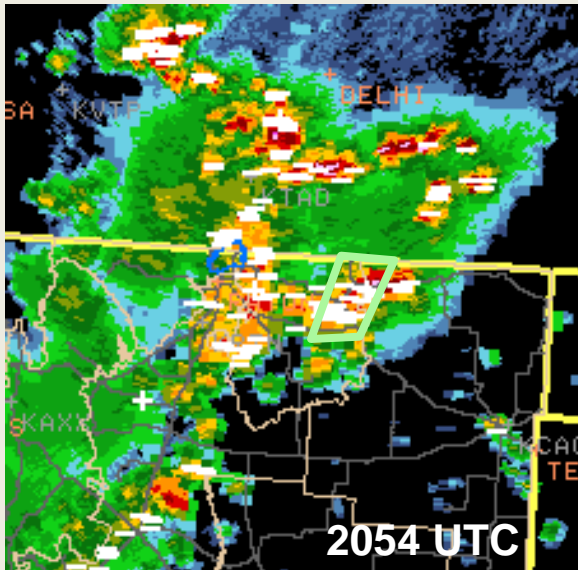
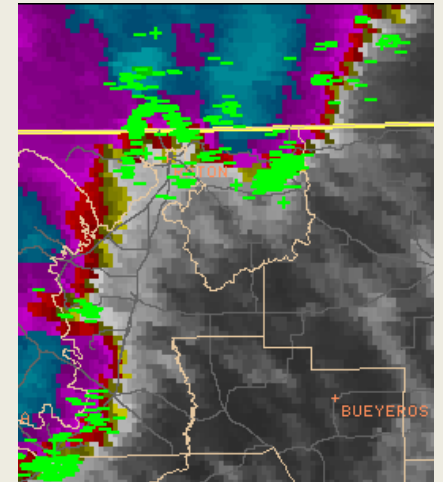
Hybrid IR  
1915 UTC



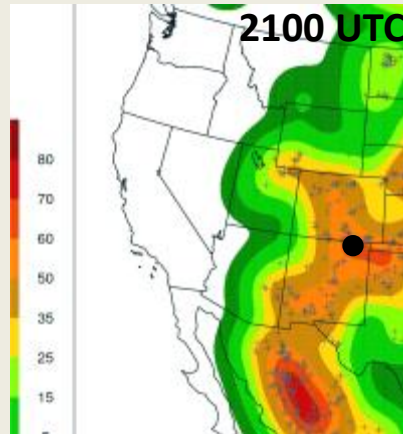
Hybrid IR  
1932 UTC



Hybrid IR  
1945 UTC



NSSL Reflectivity Test





## Summary

- Combination of the suite of CI products and SPoRT hybrid & MODIS imagery has the potential to add significant value to better forecast hazardous convective days during the southwest monsoon
  - Use of NSSL WRF CI test can improve probability forecasts
  - Use of UW/CIMMS CI product can provide substantial lead time for specific storm events
  - NASA SPoRT hybrid and MODIS imagery increases confidence of hazardous weather detection
- Latency of SPoRT hybrid and UWCI products remains an issue for very near real time applications. However these products serve as a highly effective training tool for the use of future GOES-R data