



GOES-R Proving Ground CIRA / RAMMB Progress Report

***PG All-Hands Meeting
06 May 2013***

Outline

- **Planning for NHC and Pacific Region Proving Grounds**
- **Selected User Interactions**
 - **2013 HWT Spring Experiment**
 - **Synthetic Imagery Update**
 - **Recent Product Examples**
- **Systems Report**
- **Conferences and Meetings**

Update on NHC Proving Ground

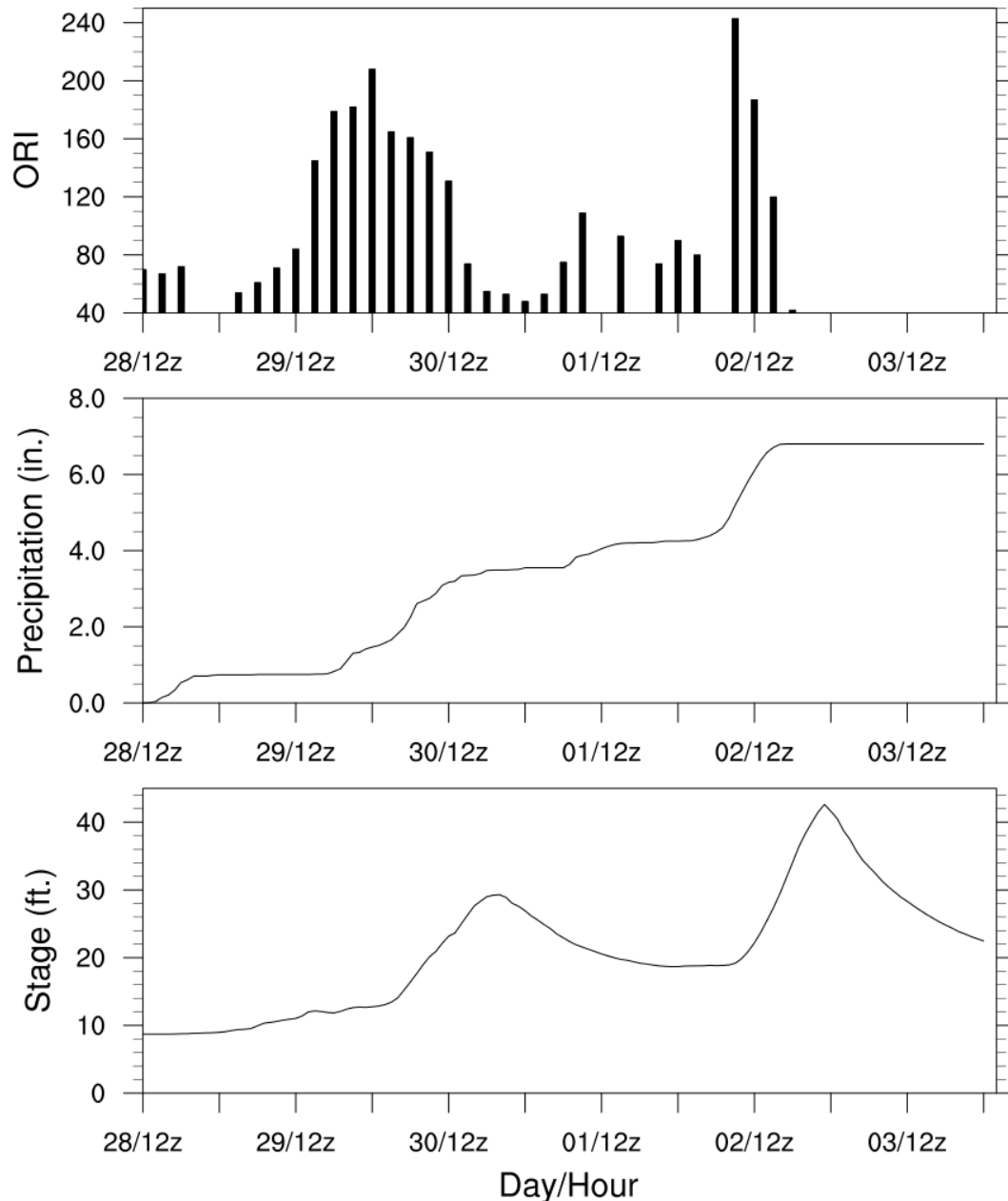
- 2012 Final report completed and submitted to the GOES-R Program Office
- Very successful RGB training at NHC April 24-25th
 - Sarah Monette (CIMSS), John Knaff (NESDIS), Jochen Kerkmann (EUMETSAT), Kevin Fuell (SPoRT)
 - Several new products introduced
- Work beginning on 2013 PG operations plan
- Aug 1st -Nov 30th
- Selection of candidate products expected by May 31st
- Implementation may be delayed due NHC WCOSS transition activities
- Michael Folmer visit to NHC late May 20⁻²⁴ for TAFB part of PG
- Final PG training late July 2013

Planning for 2013

Pacific Proving Ground

- M. DeMaria helping with operations plan
- Two products from RAMMB and CIRA
 - Orographic Rain Index (ORI) for Hawaii
 - Successfully installed on HFO AWIPS-1 (thanks J. Gerth)
 - Training being prepared for HFO forecasters
 - Tropical Cyclone Rapid Intensification Index with Lightning
 - Expected by Aug 1, 2013
 - Updated version for Central Pacific
 - New version for Western North Pacific
 - Forecaster feedback from JTWC, CPHC and Guam WFO
- Possible CPHC, JTWC visit by M. DeMaria, early July

ORI update



We are preparing more formal training materials to be used for evaluation period beginning next Fall.

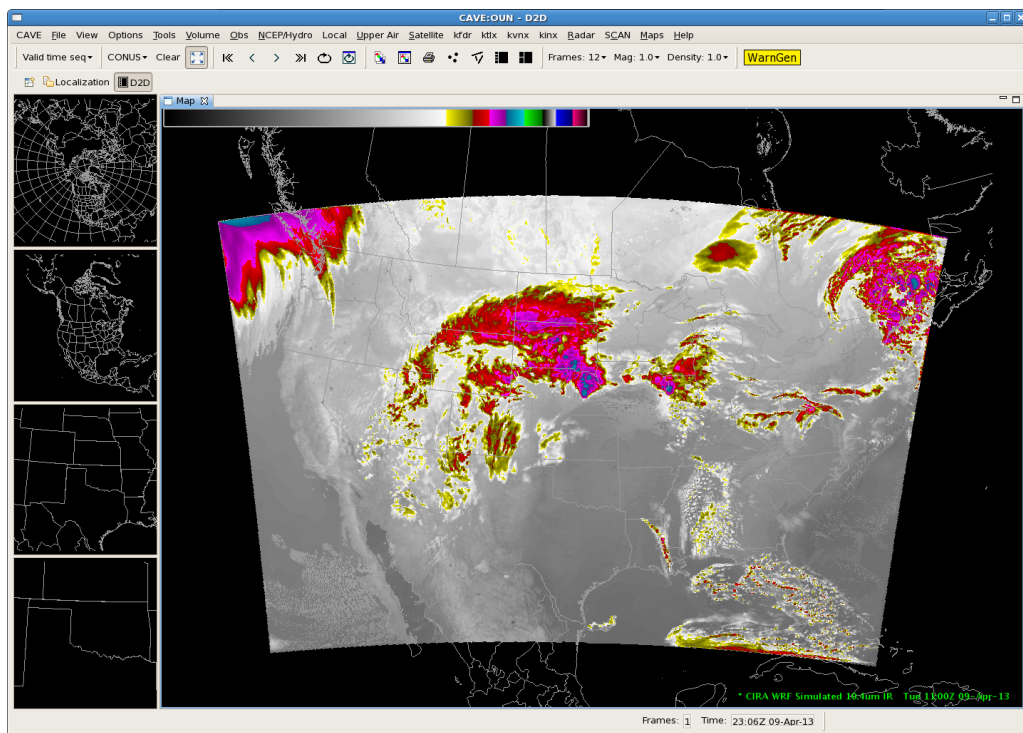
Here we show a comparison of ORI values with nearby precipitation for a late November 2012 rain event in Northern California. Recently added is a comparison to downstream gages (note the strong response in this example).

Will be doing the same for Hawaii cases.

- **WFOs Boulder & Cheyenne:** Organized visit 15-19 April to Boulder (WFO & ESRL), CIRA and Cheyenne WFO by Geoffrey Stano from SPoRT about a Fire Weather experiment this spring/summer involving Colorado LMA network and fire detection products (WFABBA).
 - Fire weather aspect of the project will be delayed for awhile until the deepening snows melt!
 - By then likely the AWIPS II “freeze” at BOU could be over.
 - Total lightning data will be examined for other applications
- **Potential PG Dust Product testing**
 - With some western WFOs who may be part of a future organized assessment.
- **WFO San Juan, Puerto Rico:** SOO there is very interested in using the ORI product. We are in the process of reconfiguring ORI to apply better to the lower elevations in PR and hope to have something soon.
- **HWT & WFOs:** Synthetic Imagery update (next).

2013 HWT Spring Experiment

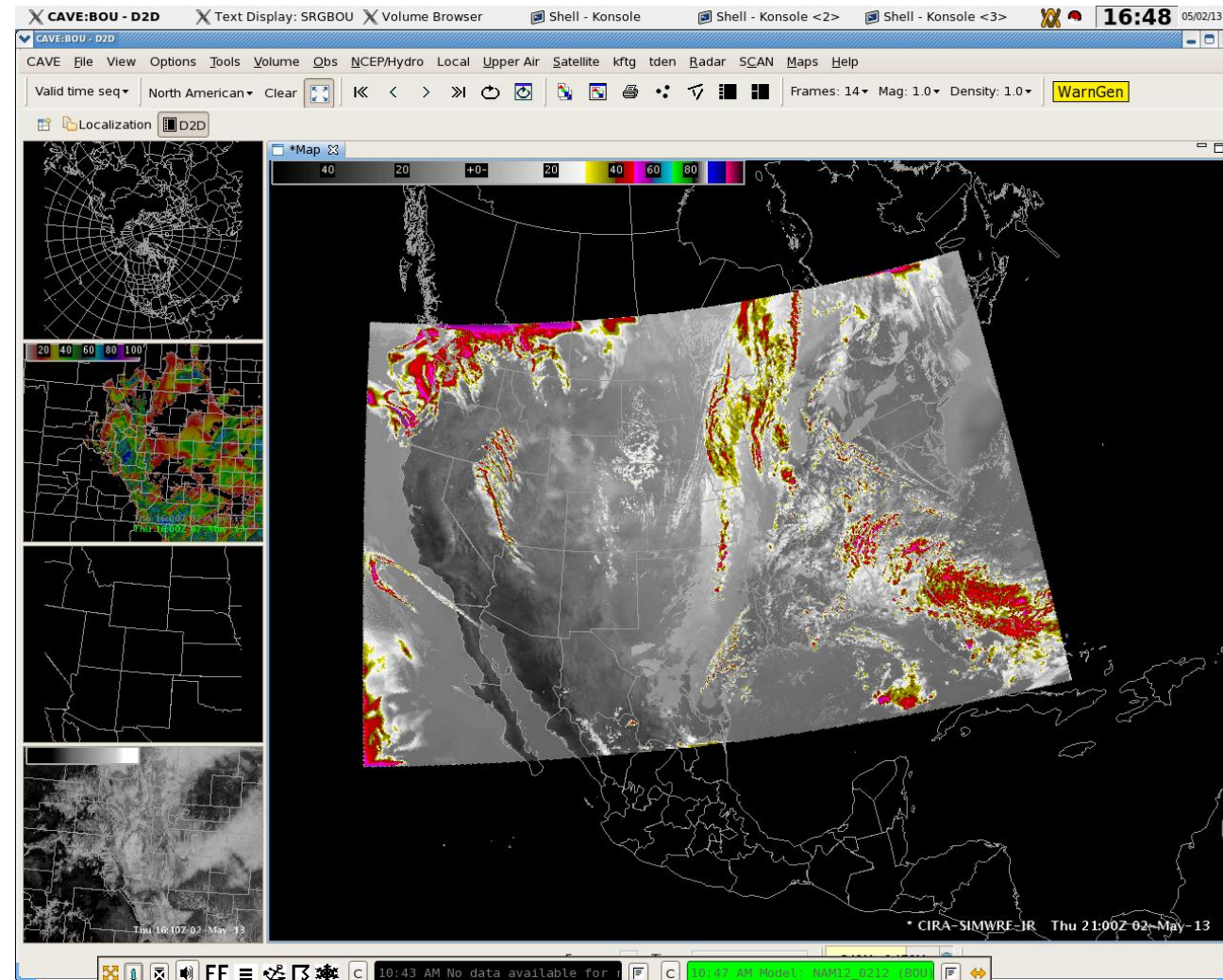
- Synthetic Imagery from the NSSL WRF and the NAM Nest models is being provided to the SPC for this year's experiment, which begins today
- Data is in NAWIPS format the EFP, and AWIPS2 format for the EWP
- Training material was provided so that participants are familiar with the products before arriving



Screen grab from AWIPS2
showing the NSSL WRF Synthetic
10.35 μm band, courtesy of
Darrel Kingfield

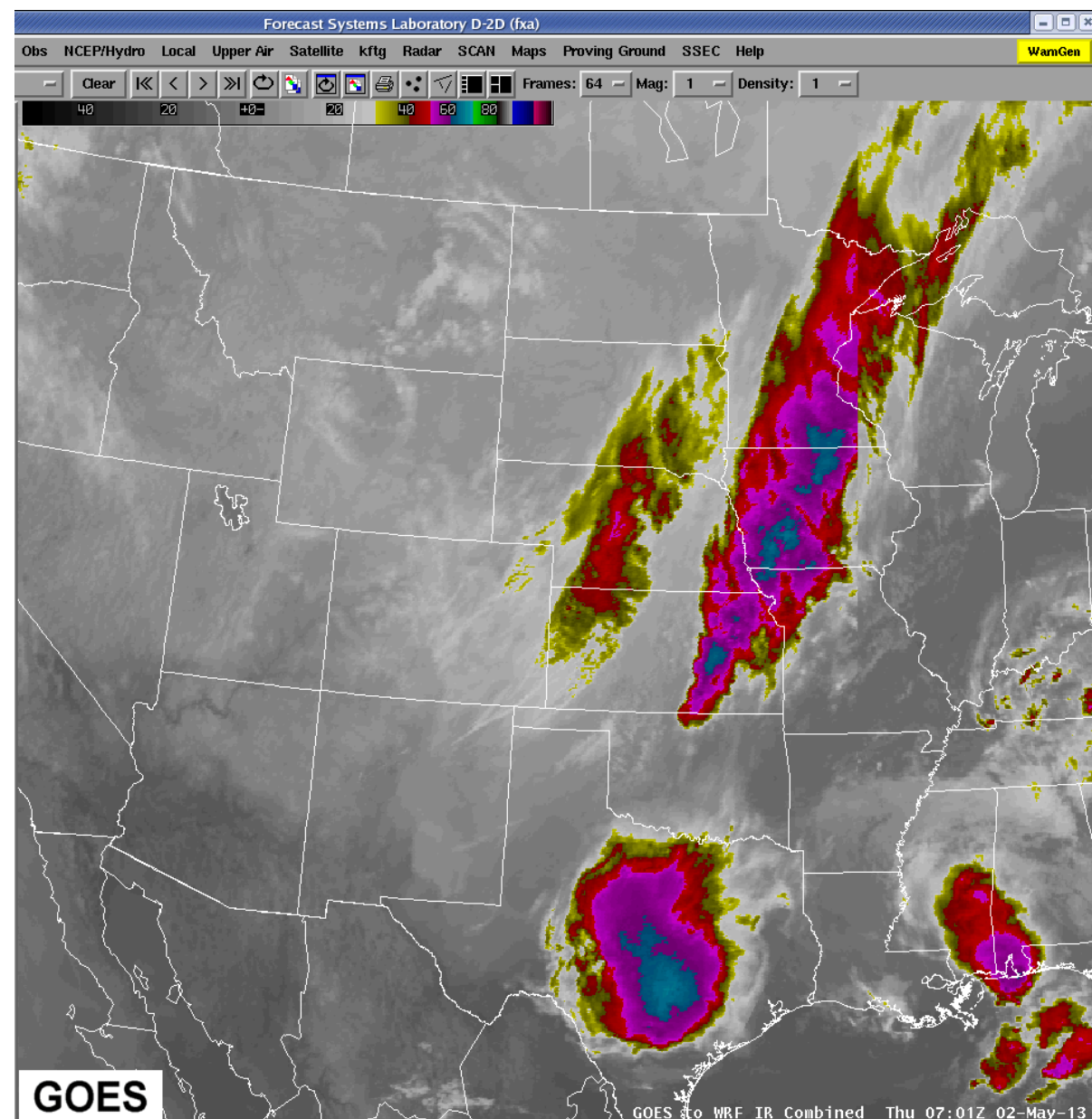
Synthetic Imagery Update

- Boulder WFO now getting NSSL WRF Synthetic Imagery into AWIPS2
- Instructions have been provided to Eastern Region Headquarters to ingest and display the synthetic imagery in AWIPS2



Screen-grab of BOU's AWIPS2 showing a synthetic IR image. Courtesy of Eric Thaler, BOU SOO

New Synthetic Imagery Application in AWIPS



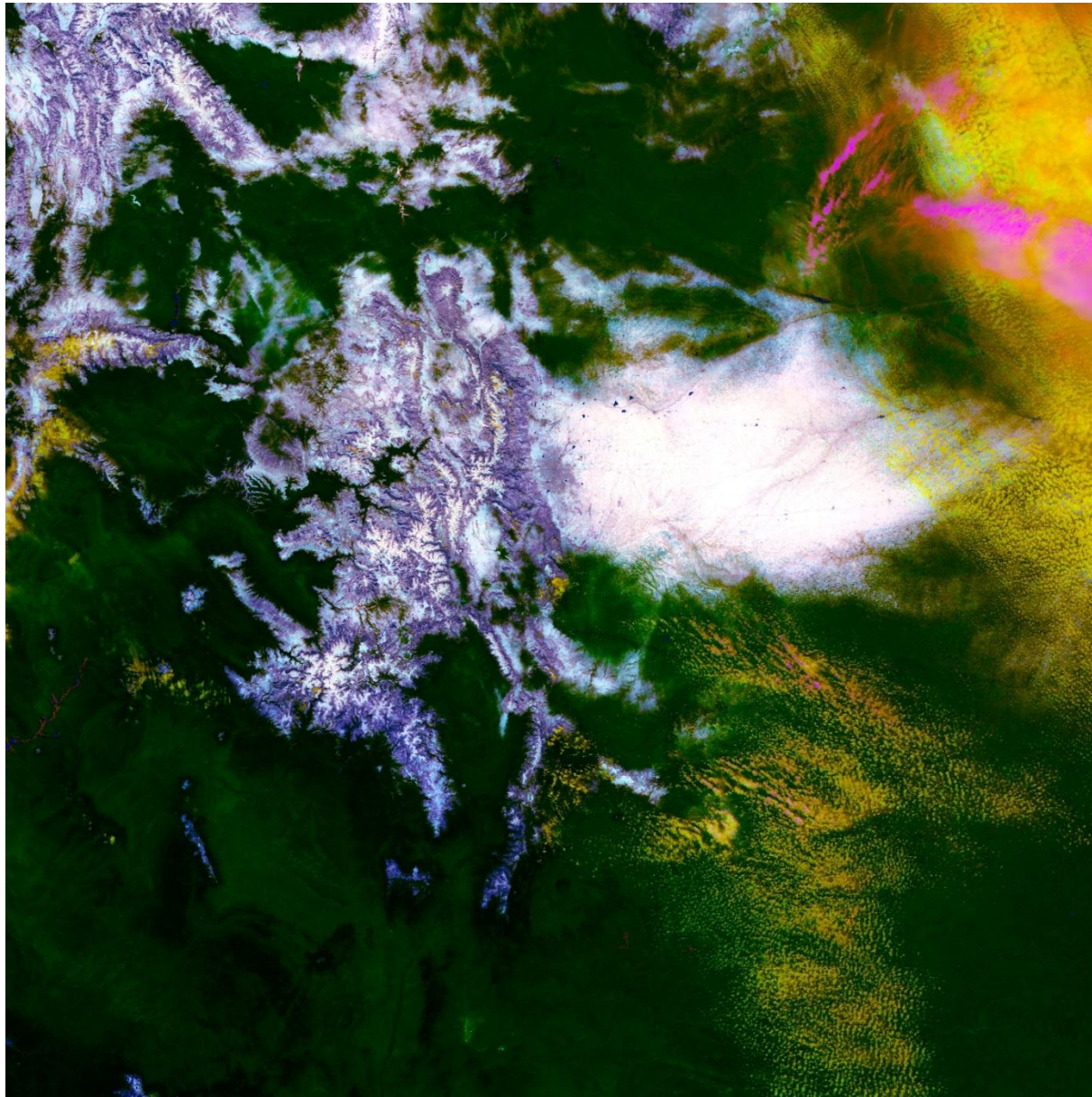
- This new application shows a GOES IR loop that transitions into the forecast IR loop at the current hour
- Provides an easy way for forecasters to compare the model cloud locations to the observed GOES
- Application sent to the Riverton, WY, WFO and is currently being tested there


VIIRS High/Low Cloud/Snow Development Examples

RGB Color Key:

- Snow: white/blue
- Low Cloud: yellow
- Mid-level/mixed: orange
- High-level: magenta
- Snow-free land: green

Example for Colorado Snowfield – images from 1955 UTC on 25 Mar 2013



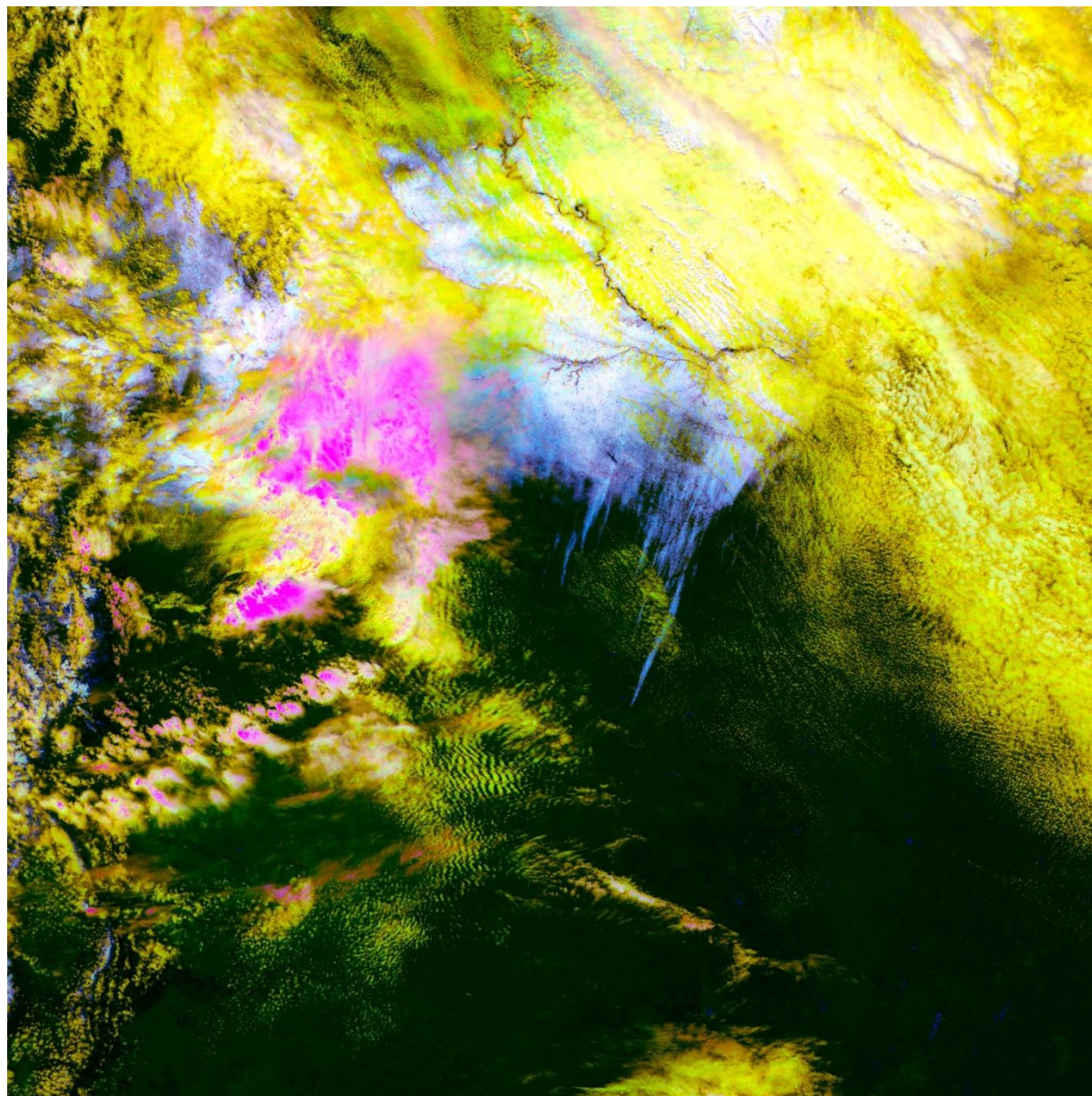
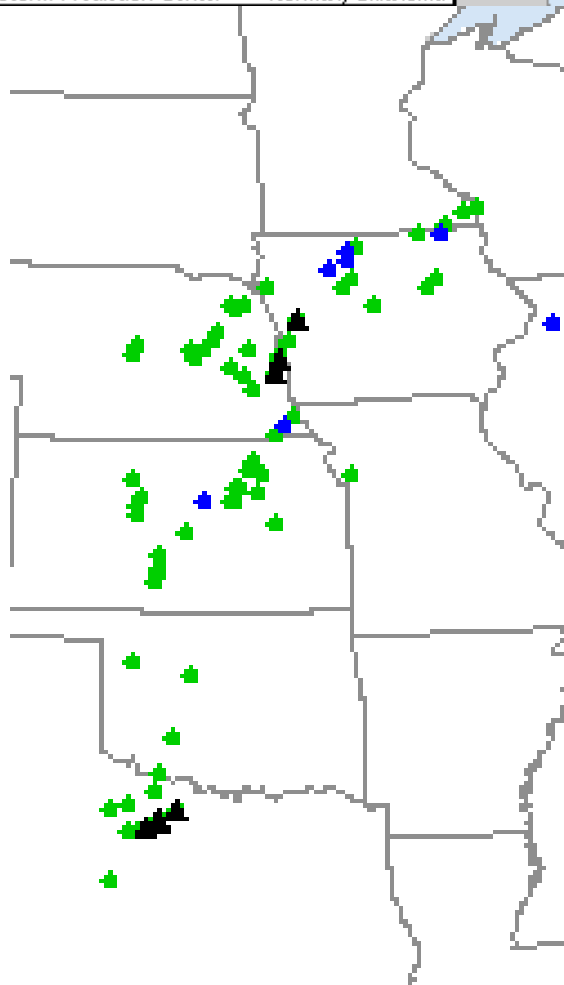
 **TORNADO REPORTS.. (0)**
WIND REPORTS/HI..... (9/0)
HAIL REPORTS/LG..... (69/8)
TOTAL REPORTS..... (78)

National Weather Service
Storm Prediction Center
Norman, Oklahoma

PRELIMINARY DATA ONLY

- High Wind Report (65KT +)
- ▲ Large Hail Report (2" dia. +)

Nebraska Hail Streaks? – Image days later (1920 UTC on 12 April)



Hail reports from SPC for 24-h
ending 1200 UTC/9 April
2013

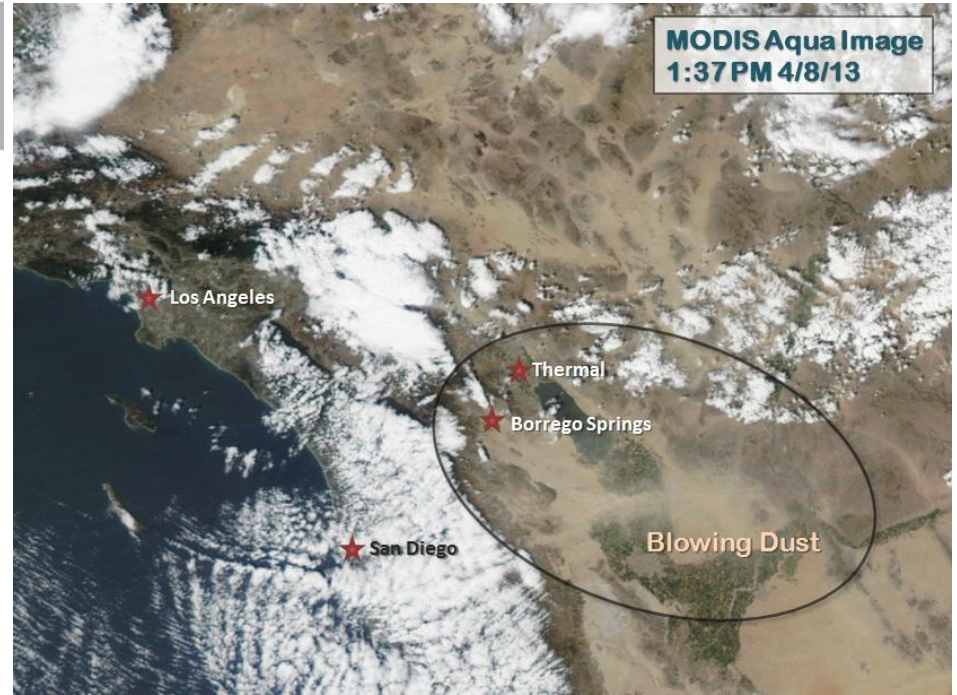
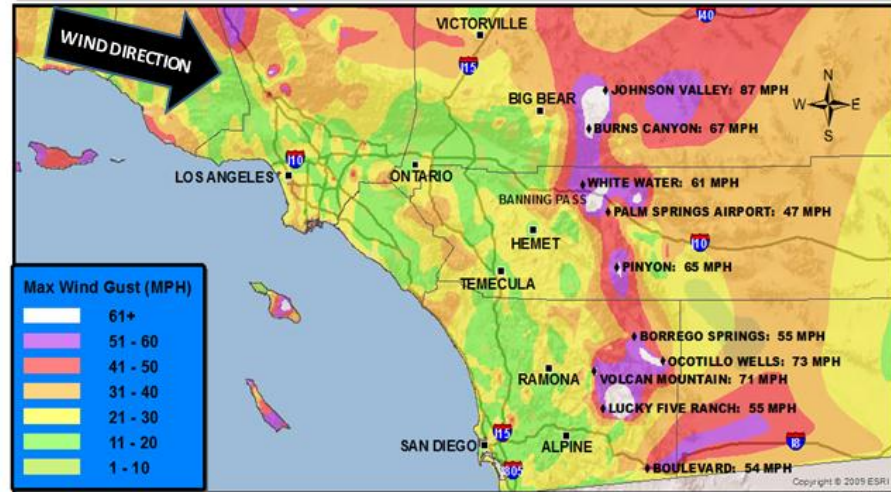
Dust Events & WFO interactions

- **A couple of recent dust events led to WFO interaction and potential for further efforts down the road**
 - **Dust event in Southern California on 8 April was documented by WFO San Diego SOO Alex Tardy**
 - They partner with us on other PG products, and this led to us sending him how the dust looked with the Pink and Yellow MODIS dust products
 - And Steve Miller put together an example using VIIRS imagery for a dust event in Southwest Colorado
 - **WFO El Paso**
 - Noticed some satellite imagery on their NWS Facebook page about a dust event and followed up to see if they would be interested in VIIRS/MODIS imagery – usual concerns over bandwidth
 - **Potential course of action:**
 - A more organized assessment of dust products
 - So on 26 April Steve Miller briefed Chad Gravelle and Michael Folmer about the DEBRA algorithm for generating dust and other potential PG products from VIIRS and MODIS for testing at appropriate WFOs

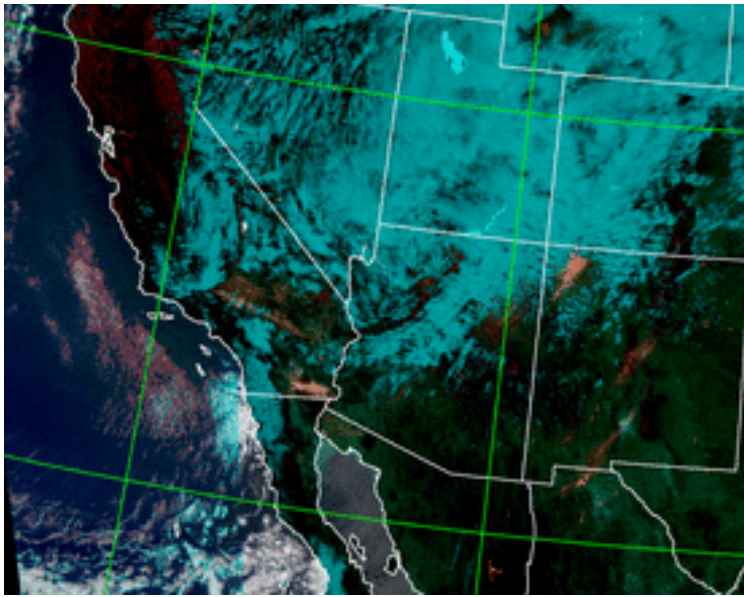
From Alex Tardy, SOO at WFO San Diego – 8 Apr dust event

Monday's Maximum Wind Gusts

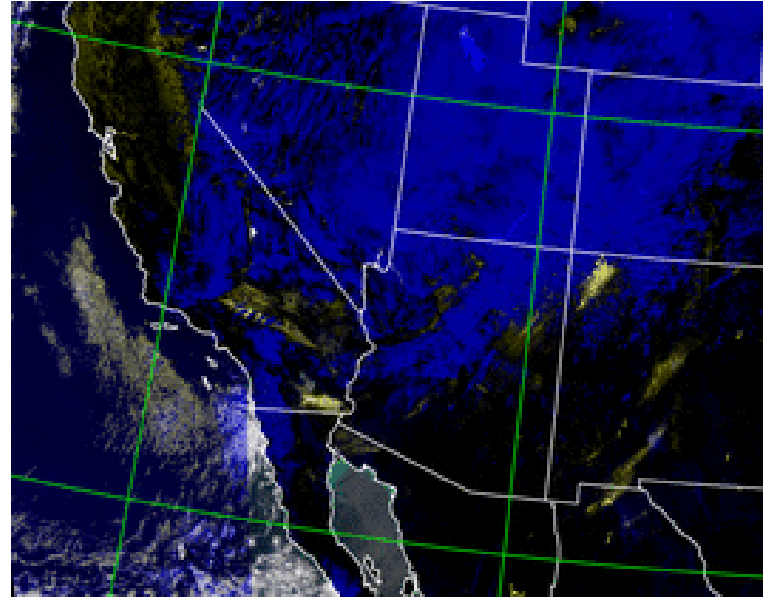
Date: 4/8/2013



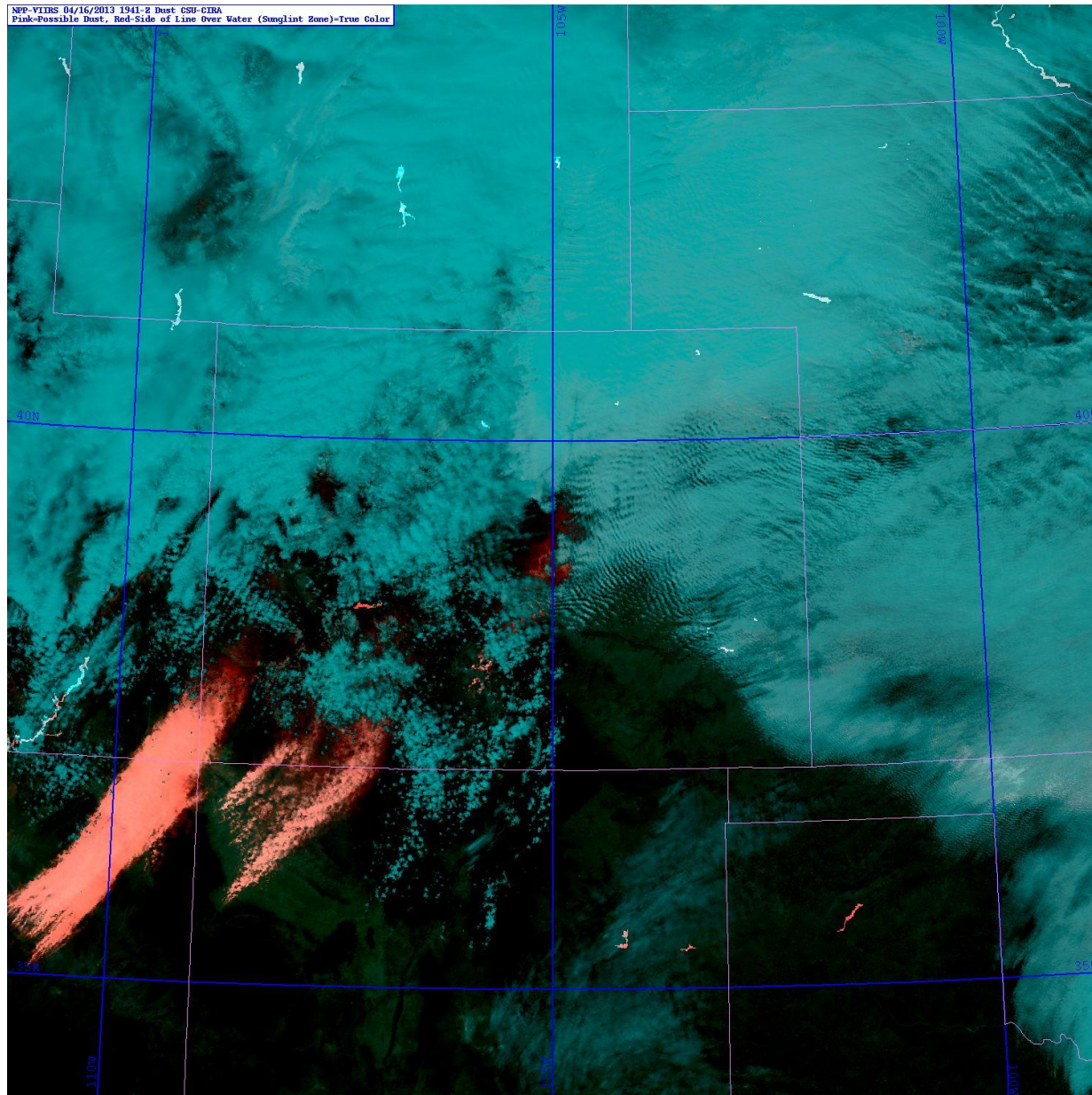
MODIS Pink dust product



MODIS Yellow dust product



VIIRS imagery at 1941 UTC/16 April 2013 for SW Colorado dust storm





Impact of the dust: deposited in the midst of one of our April snowstorms.

What will be the eventual effect on snow melt in the mountains (assuming it melts)?

Louie Grasso's yard in Fort Collins showing the "dirty snow" and sediment visible in a melted sample.



AWIPS1

- **Pacific Region ORI Product**

- Product has been installed on HFO AWIPS1 workstation (thanks Jordan!)

AWIPS2

- **AWIPS2 products to WFOs**

- Real-time CIRA 4 KM SIMWRF IR & WV AWIPS2, GeoColor, and Low Cloud/Fog Decision Aid products are being ingest at BOU.
 - Real-time CIRA 4 KM SIMWRF IR & WV AWIPS2, GeoColor, and Low Cloud/Fog Decision Aid products are being ingest at SPC.
 - Instructions on how to ingest of CIRA 4 KM SIMWRF IR & WV AWIPS2 products have been sent to Josh Watson at ERH.

- **Working group participation**

- Participation in the SPoRT led Experimental Products Development Team (EPDT) bi-weekly telecons is ongoing.
 - Participation in the monthly NDE-AWIPS telecons is ongoing.

Recent:

- **March 5-7:** Interdepartmental Hurricane Conference, College Park, MD
John Knaff & Kate Musgrave
Remotely Participating: Mark DeMaria & Andrea Schumacher
- **March 12-14:** EPDT/AWIPSII workshop at SPoRT
Deb Molenaar
- **March 18-22:** NOAA Science Week
- **April 8-12:** NOAA Satellite Conference, College Park, MD
Bernie Connell, Curtis Seaman, & Steve Miller
- **April 15-19:** Geoffrey Stan, SPoRT, visiting CIRA, ESRL, and BOU & CYS WFOs
(GOES-R Visiting Scientist Program)

Upcoming:

- **May 6 - 10** SPC Spring Experiment - Louie Grasso
- **June 17 – 21** OCONUS Proving Ground Meeting in Fairbanks and Anchorage
Steve Miller

Thanks!

Questions..?