GOES-R Proving Ground
CIRA / RAMMB Progress Report

PG All-Hands Meeting
14 January 2013

Outline

- **Selected User Interactions**

- **Recent Product Examples**

- **Systems Report**

- **Conferences and Meetings**

Selected User Interactions

- **Hawaii – Pacific Center:** Interaction with Roy Huff regarding ORI and new lightning products.

- **WFO Boulder**: More use of synthetic imagery for wave clouds in late November.

- **WFO Cheyenne & Buffalo:** Recent feedback on MODIS cloud layer & snow cover discriminator products.

- **WFO Los Angeles:** Instructions for getting synthetic imagery on AWIPS sent on 7 Jan per request from WFO after taking VISIT course.

- **WFO Gaylord, MI:** Began using synthetic imagery on 13 Dec 2012 – sent nice feedback via AFD.

- **WFO Kansas City, MO:** Began using synthetic imagery in early Dec 2012 – sent nice feedback via AFD and email.

- **WFO Columbia, SC:** Nice interaction with forecasters from the WFO following the 12 December VISIT Live Satellite Chat session (CIRA and CIMSS hosting). Made blog entry on their 3 Dec fog event highlighting synthetic and other products.
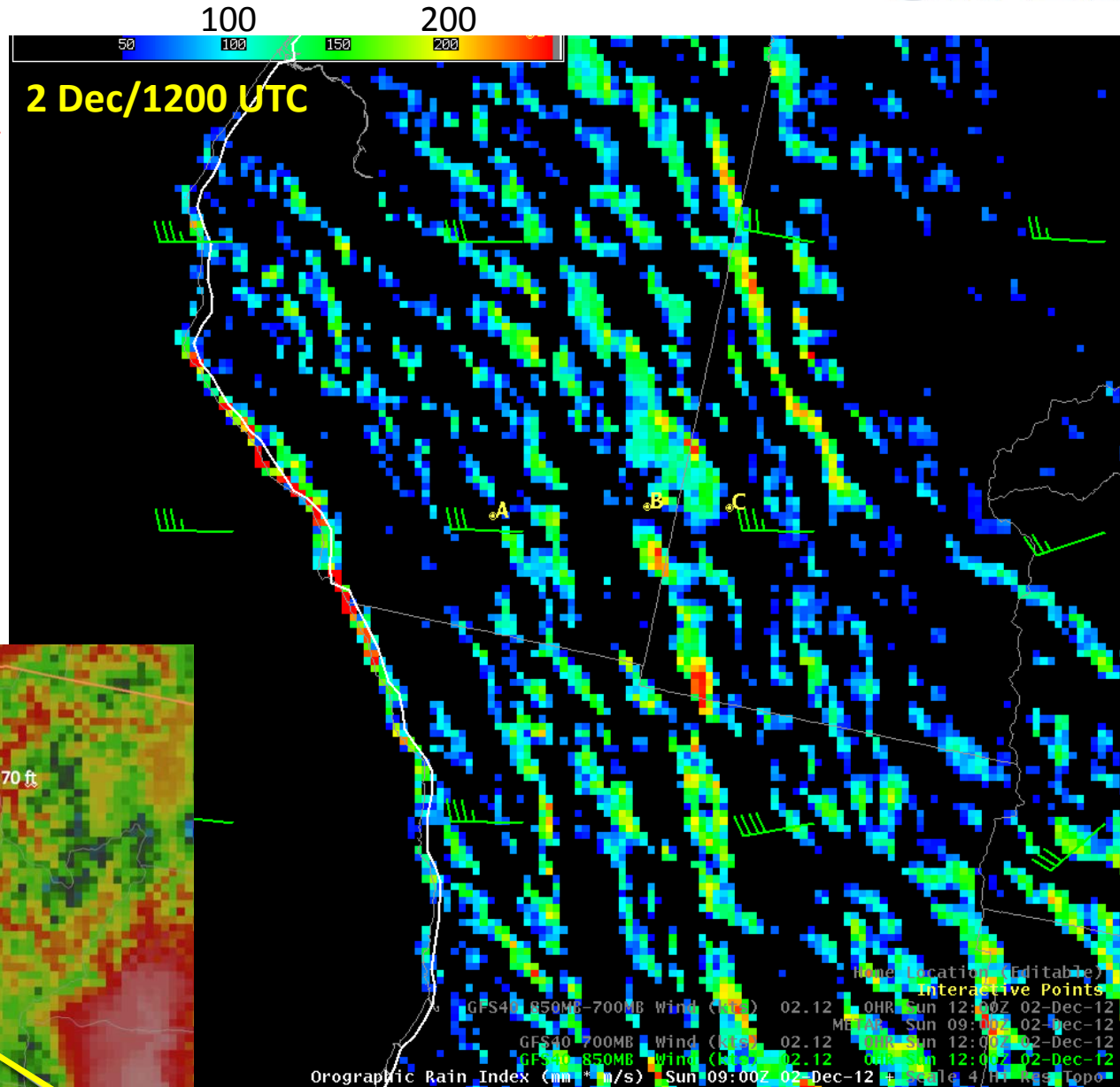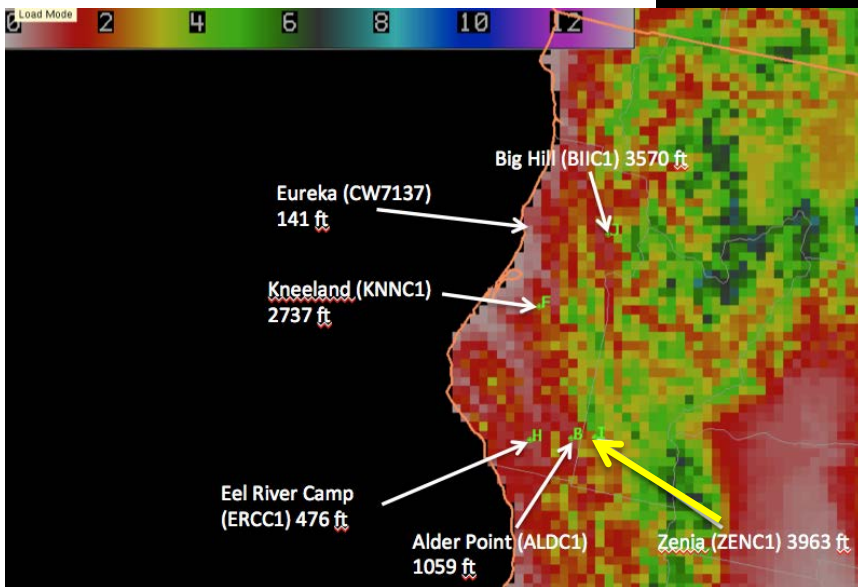
***'Super Storm' Sandy
Power outages***

ORI (Orographic Rain Index) Case

28 Nov – 2 Dec 2012 heavy rains in Northern California - Seeking a more quantitative look at the ORI product: Comparison of ORI values is underway for coastal stations in Northern California and elsewhere. Beginning to look at Hawaii.

Points with gage data on terrain map

2 Dec/1200 UTC

GFS40 850MB-700MB Wind (XIG) 02.12   OHR Sun 12:00Z 02-Dec-12
GFS40 700MB Wind (XIG) 02.12   METAR Sun 09:00Z 02-Dec-12
GFS40 850MB Wind (XIG) 02.12   OHR Sun 12:00Z 02-Dec-12
Orographic Rain Index (mm * m/s) Sun 09:00Z 02-Dec-12 Scale 4/Hi-Res Topo

ORI over Northern CA (image) with 850 mb winds

Eureka (CW7137) 141 ft
Big Hill (BIIC1) 3570 ft
Kneeland (KNNC1) 2737 ft
Eel River Camp (ERCC1) 476 ft
Alder Point (ALDC1) 1059 ft
Zenia (ZENC1) 3963 ft

ORI vs. Accumulated Precipitation

1 hr Accumulated Precipitation at ZENC1 for 11/28 - 12/3, 2012 versus maximum ORI value within 9 km of site

Station Zenia (south of Eureka) – elevation = 3963 ft
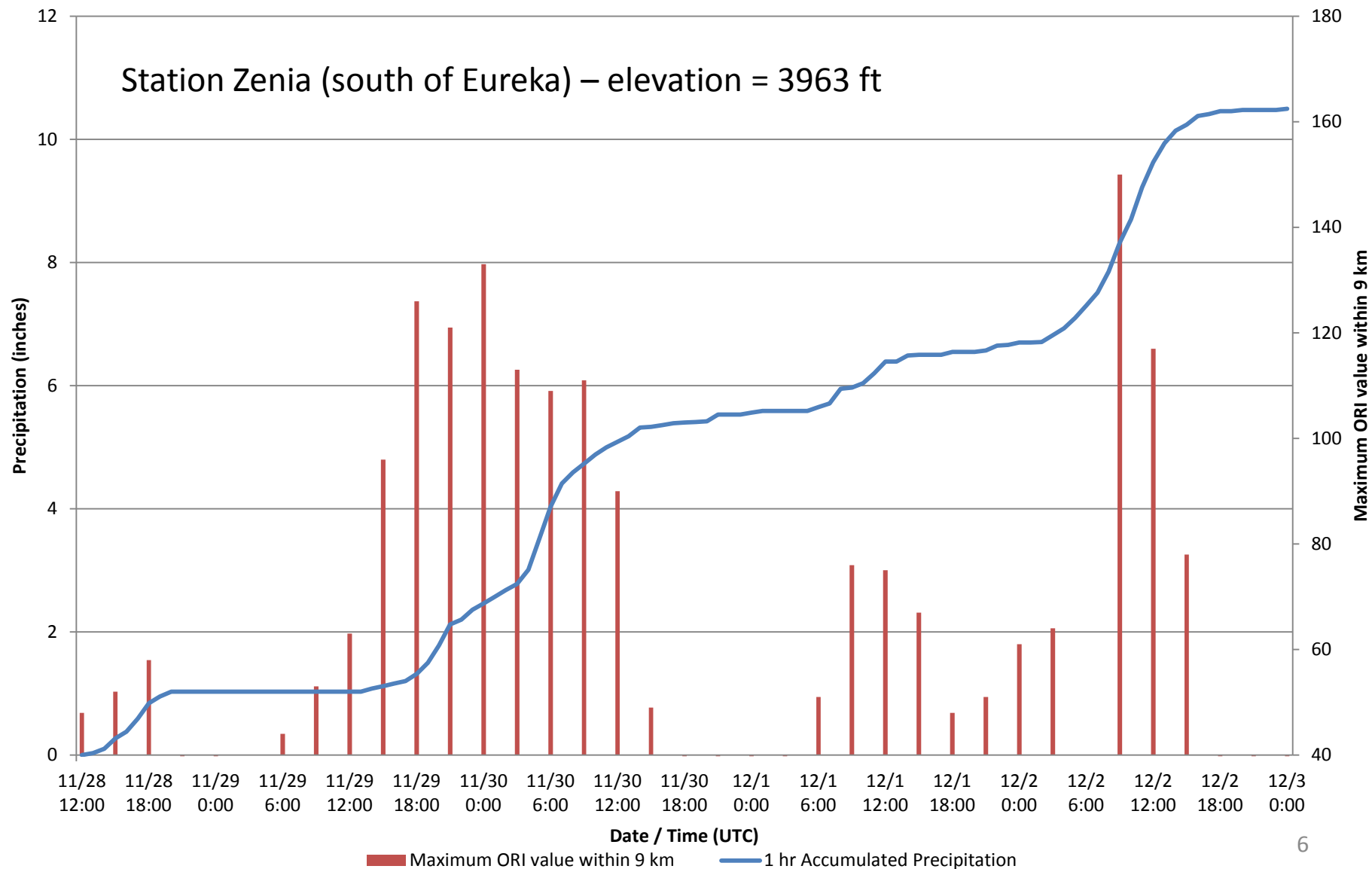
**MODIS Cloud Layers and Snow Cover Discriminator Product
for 3 January2013 from WFO Cheyenne
sent by forecaster/satellite Focal Point Becca Mazur**
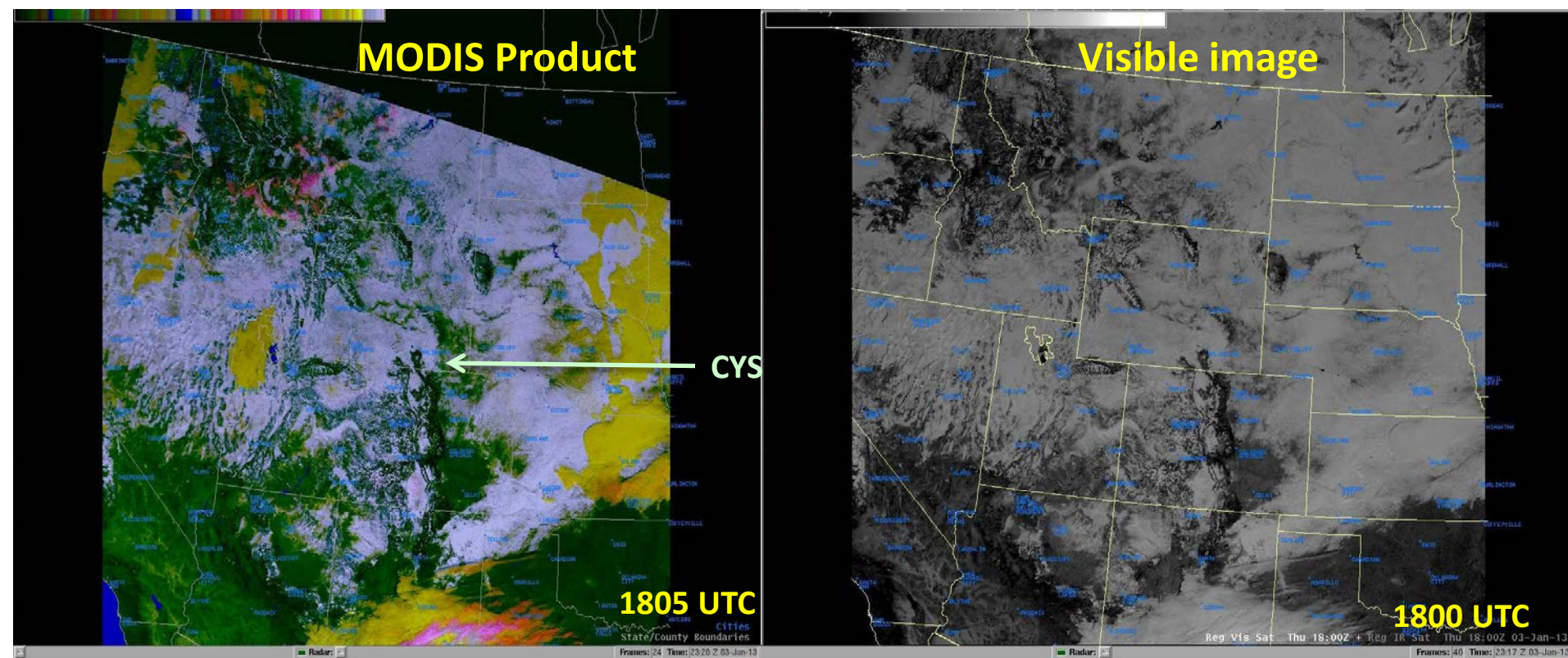
Summary of forecaster comments on this product:

- Generally well liked despite infrequent imagery
- Much easier to determine clouds from snow cover
- Cloud layer product can be useful for TAFs
- "We can't wait to get this in high spatial *and* temporal resolution!"

Forecaster comment to Dave Zaff: product was useful in forecasting skies to clear the evening of 7 January.
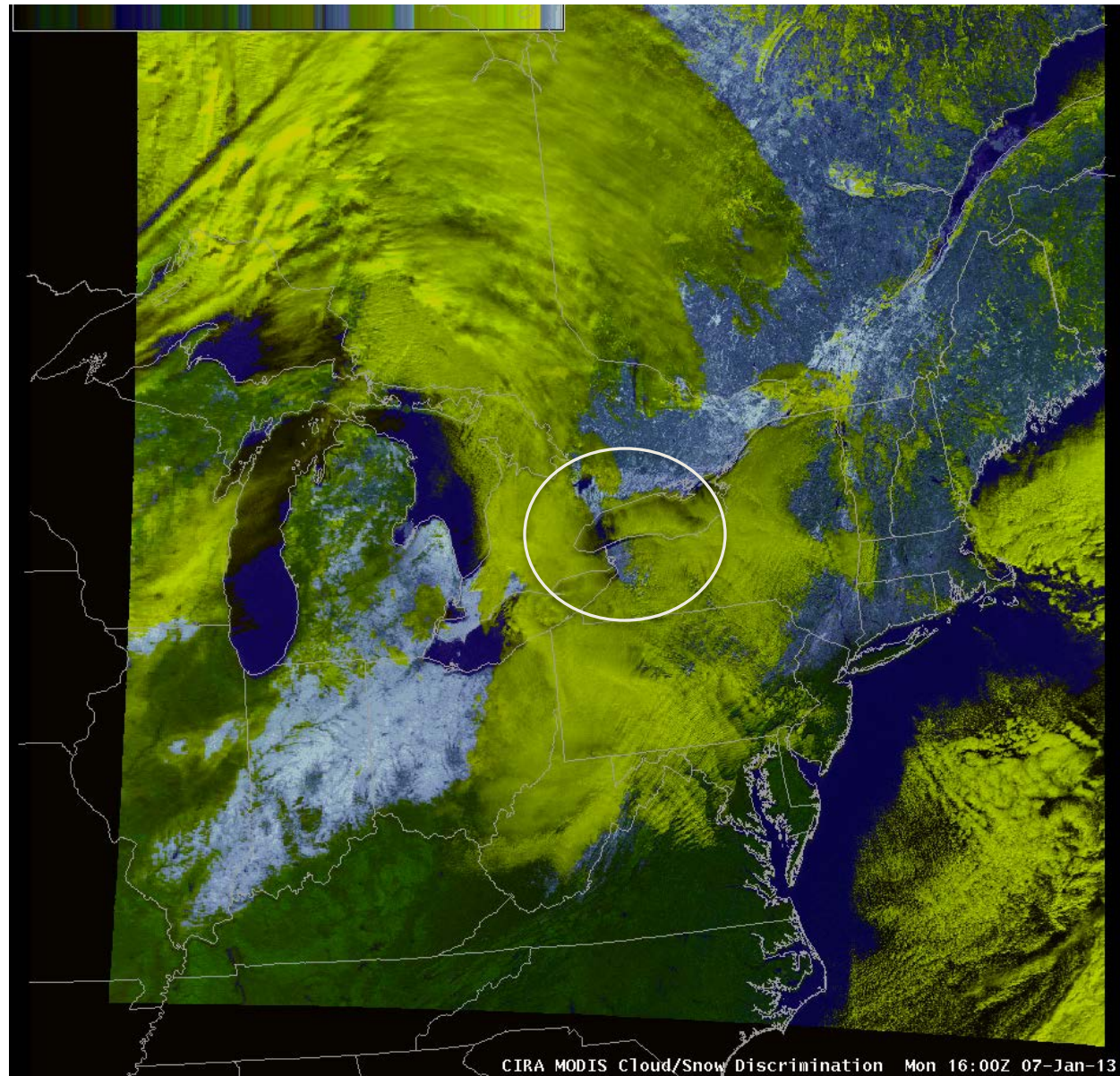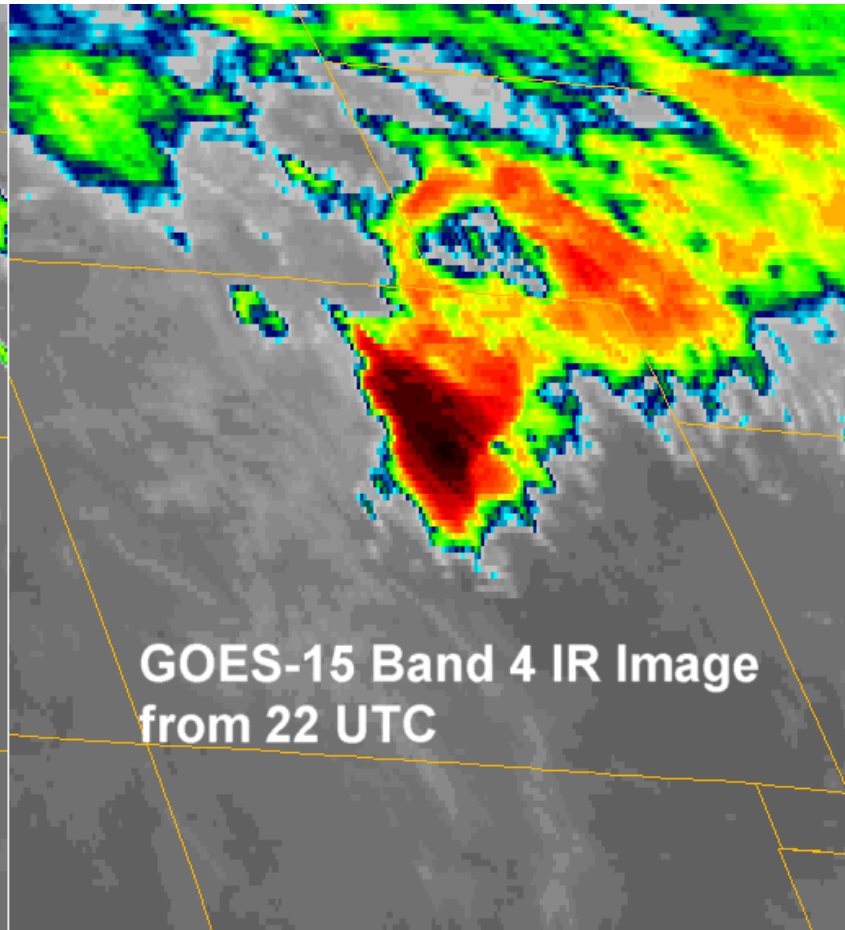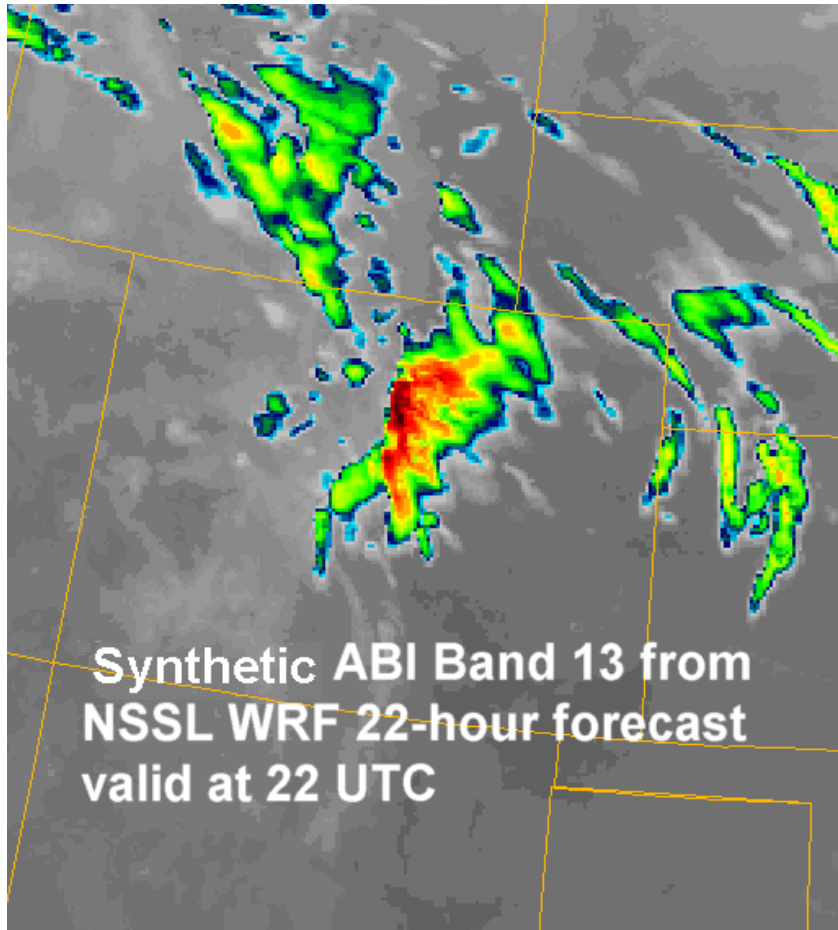

CIRA MODIS Cloud/Snow Discrimination Mon 16:00Z 07-Jan-13

CIRA NSSL-WRF synthetic Imagery

- Synthetic imagery is now produced in real-time based on the 4 km NAM Nest model – so far one band only.

- In November, synthetic GOES-R ABI imagery from the NSSL WRF produced by CIRA was mentioned multiple times by the WFO Boulder in their Area Forecast Discussions (AFDs).

- Mountain wave clouds are a persistent forecast problem and the synthetic imagery typically does a very good job predicting these temperature-forecast-busting clouds. An example from the 24 November morning AFD:
"WILL LIKELY KNOCK DOWN AROUND 5 DEGREES ALONG THE ADJACENT PLAINS AND ADD MORE CLOUDS FOR THE TODAY PERIOD. THE WRF SIMULATED SAT IMAGERY HAS WAVE CLOUDS LOCKED IN FROM MUCH OF TODAY BEFORE DISSIPATING LATER THIS EVENING."

CIRA NSSL-WRF synthetic Imagery – 24 Nov

Synthetic ABI Band 13 from NSSL WRF 22-hour forecast valid at 22 UTC

GOES-15 Band 4 IR Image from 22 UTC

The WRF forecast imagery does a good job predicting the thick mountain wave cloud over the Colorado Front Range.

From: **Jenni Laflin** <jennifer.laflin@noaa.gov>
Date: Fri, Dec 14, 2012 at 11:14 AM
Subject: Using the simulated WRF for my TAFs!
To: Chad Gravelle - NOAA Affiliate <chad.gravelle@noaa.gov>
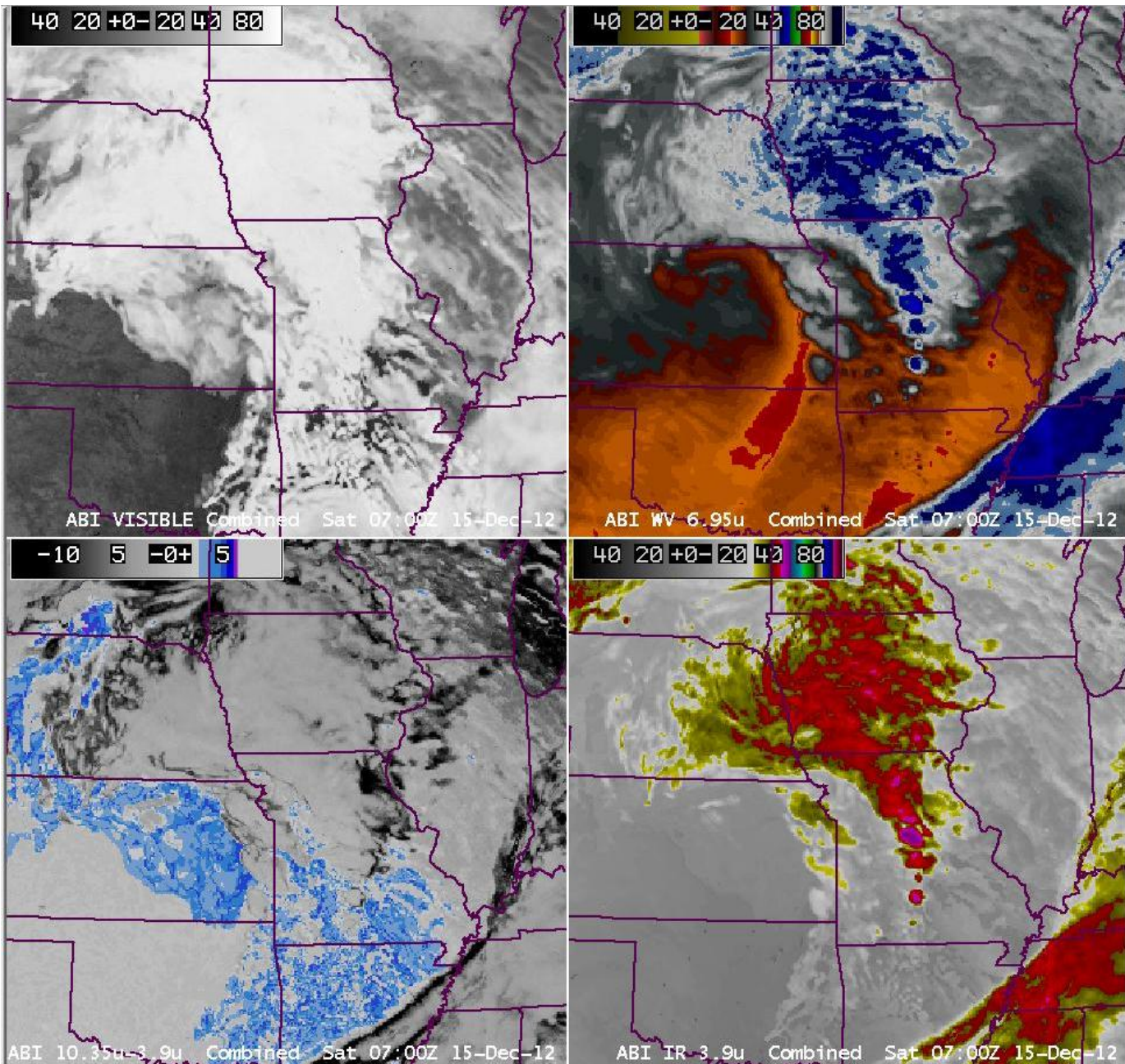
Hey Chad,

Just thought I'd send you a couple screen shots of the WRF simulated products today -- **super helpful with the timing of precip, narrowing down when precip looks convective-y and identifying/timing that low stratus and drizzle in behind the system.** If the text is hard to read, image 1 is valid at 0400z and image 2 is valid at 0700z.

These products are awesome -- they should definitely become operational! We really need hourly model data (especially satellite, I think) for the new ESTF stuff. Thanks!

Jenni Laflin
General Forecaster
National Weather Service
Kansas City/Pleasant Hill, MO

ABI VISIBLE Combined   Sat 07:00Z 15-Dec-12
ABI WV 6.95u   Combined   Sat 07:00Z 15-Dec-12
ABI 10.35u-3.9u   Combined   Sat 07:00Z 15-Dec-12
ABI IR 3.9u   Combined   Sat 07:00Z 15-Dec-12

Systems Report

AWIPS1

- Orographic Rainfall Index (ORI) for Pacific OPS available on LDM at CIRA
  - S. Kidder ORI product for Hawaii is being distributed via LDM.
  - The Pacific ORI data ingest for LDM instructions sent to Eric Lau of Pacific Region HQ
- Configuration of new AWIPS1 WES completed

AWIPS2

- AWIPS2 products to CRH
  - Real-time AWIPS2 format 1 KM east & west CONUS GeoColor & 4 KM east & west CONUS CIRA low cloud/fog decision aid products, and 4 KM SIMWRF IR & WV are now being sent to LDM via new CIRA ldm server.
  - Test of the above products at Omaha WFO will begin soon.
  - Efforts are underway to convert Hawaii ORI product to AWIPS2 format. AWIPS2 localization change to HFO is more complex than expected (99 page instructions???). Currently trying to implement via AWIPS1 components & config_awips2 script.

Conferences / Meetings

Recent:

- **December 3-7:   AGU, San Francisco – Steve Miller**
- **January 7-10:   AMS Annual Meeting, Austin, TX**
    - **CIRA/RAMMB Participants :**
        - **Mark DeMaria**
        - **Steve Miller**
        - **Don Hillger**
        - **Scott Longmore**
        - **Kate Musgrave**
        - **Andrea Schumacher**

Upcoming:

- **March 18-22:   NOAA Science Week**
- **April 8-12:   NOAA Satellite Conference**

Thanks!

Questions..?