



# **GOES-R Proving Ground CIRA / RAMMB Progress Report**

***12 September 2011***



# User Interactions



- ***Cheyenne***: Rebecca Mazur visited CIRA on August 25<sup>th</sup>. Request for new PG products to evaluate. Will visit WFO this month.
- ***Boulder***: Ready for new PG products to evaluate, CIRA providing a list.
- ***San Diego***: Alex Tardy (WCM) reported that they are now ingesting the following CIRA products:
  - GeoColor
  - Low cloud/fog discrimination
  - Blowing dust detection
- ***Monterey***:
  - Orographic Rain Index (ORI)
  - Recently added synthetic Imagery (WV and IR).
  - Interest in additional simulated bands (especially fog product)



# 2011 National Hurricane Center Proving Ground



- **Project began Aug. 1, 2011**
- **9 products being evaluated, including the following CIRA demonstrations:**
  - **GOES-R Natural Color Imagery → RAMMB TC Real-Time Webpage**
  - **EUMETSAT Red/Green/Blue (RGB) Airmass and Dust → NAWIPS (by SPoRT) and Google Earth**
  - **Rapid Intensification Index (RII) → RAMMB FTP Site**
  - **Super Rapid-Scan Operations (SRSO) Imagery → NAWIPS / RAMMB Webpage**
- **Mid-project review scheduled at NHC for Sept 13<sup>th</sup>**
- **Feedback being collected by e-mail**
- **Promising results so far for the RGB and Hurricane Intensity Estimate (HIE) products**
- **SRSO obtained for Hurricane Nate**
- **NHC established real time Global Lightning Dataset (GLD360) feed to assist with lightning product interpretation**
- **Michael Folmer is providing additional analysis of RGB products**
- **Project ends Nov. 30, 2011**



# Forecaster Feedback



Developed a new web page highlighting forecaster feedback on our PG products, including e-mails, AFDs, shift logs, blog entries, and verbal feedback. To view, click: [PG-Product-Feedback](#)

	A	B	C	D	E	F	G
1	Feedback Product	User Name	User Region	User Office	Feedback Date	Feedback Source	Feedback Text
20	West Conus GeoColor	Paul Frisbie	CR	GJT	1/1/2011	email	We are ingesting the West Conus GeoColor image into AWIPS an
21	GeoColor and CIRA Low Cloud and Fog Sat Imagery	Michael Baker	CR	BOU	1/4/2011	email	I've noticed a growing number of BOU forecasters viewing the Geo Mike...BOU
22							Yes, we've still been using the GeoColor and the Fog/low cloud pro
	Synthetic Imagery	Dan Nietfeld	CR	OMA	1/10/2011	email	As far as feedback on the GeoColor and the Fog/low cloud product
23	Synthetic IR	Eric Thaler	CR	BOU	1/11/2011	AFD	SYNTHETIC CLOUD IMAGERY FORECAST FROM CIRA SUGGE
24	GEO Color Low Cloud	Bernie Meier	CR	BOU	1/14/2011	shift log	The GeoColor color curve did not handle the low clouds over weste
25							WRF-BASED SYNTHETIC SATELLITE IMAGERY...HRRR RADAF AND MODEL QG VERTICAL VELOCITY FORECASTS ALL SUG AREA BY AFTERNOON. THIS SHOULD ALLOW FOR QUITE A B ELEVATION TEMPERATURES WELL INTO THE 50S IN MOST A
26	Synthetic IR	Eric Thaler	CR	BOU	1/27/2011	AFD	SIMULATED SATELLITE IMAGERY ALSO DEPICTS INCREASIN
27	Synthetic IR	Eric Thaler	CR	BOU	2/4/2011	AFD	Attached is a brief power point showing how well (not perfect, mind

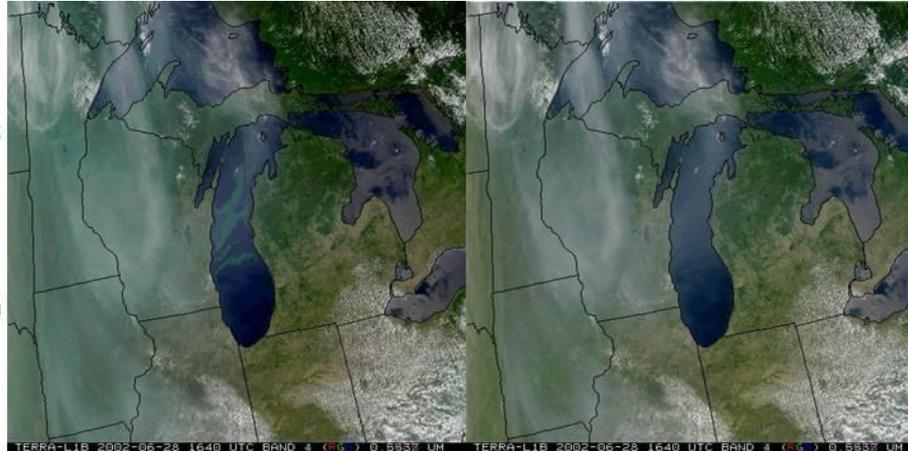
**Note: table contents can be sorted by any column header**

# Expanded Look Up Table (LUT) for Green Band Synthesis

**ORIGINAL**

**NEW**

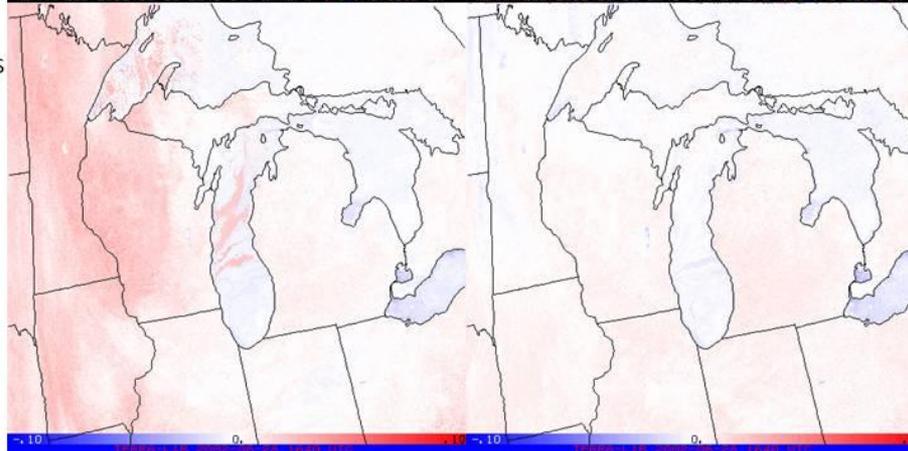
Synthetic-  
RGB  
MODIS  
2002-06-28  
  
200 x 200  
x 200 LUT  
Rayleigh-  
correction  
after LUT



Synthetic-  
RGB  
  
250 x 250  
x 250 LUT  
Rayleigh-  
correction  
before LUT

Absolute  
differences

Synthetic-  
Green is  
too green  
(on left  
side) for  
large  
zenith  
angles



Absolute  
differences

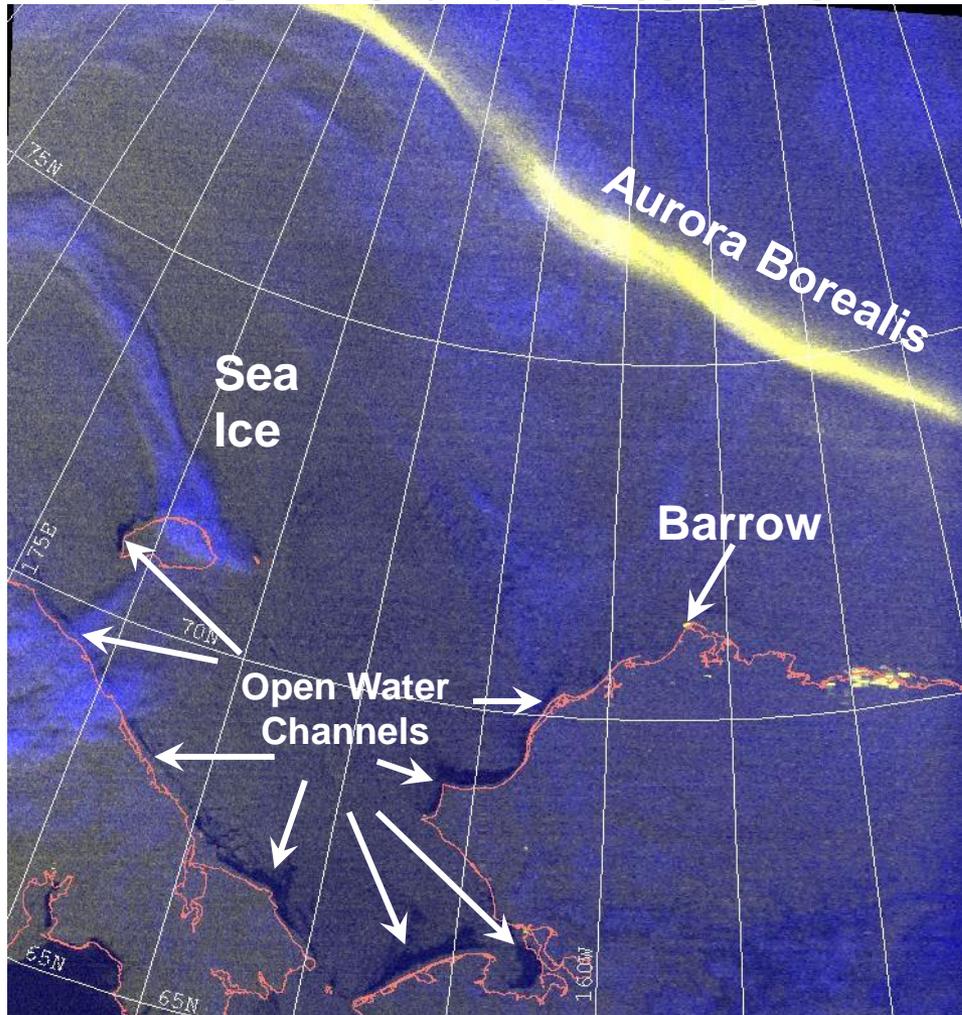
Overall,  
differences  
are much  
smaller for  
large zenith  
angles

**Left Panels:** LUT based on uncorrected reflectances & post-corrected for Rayleigh scatter (= Original Method)

**Right Panels:** LUT based on reflectances pre-corrected for Rayleigh scatter (= New Method)

→ **Qualitative inspection of the product imagery (upper panels) show that the new method reduces green bias, especially at higher sensor viewing angles. This is shown quantitatively in the absolute differences (lower panels; defined as synthetic green minus actual green)**

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- Selected low-light visible capabilities presented at OCONUS PG meeting (Juneau, Alaska)
- Follow-up discussions with Tom Heinrichs, John Zhu, Jay Cable from the Geographic Information Network of Alaska (GINA; Univ. of Alaska, Fairbanks)
- Porting codes to GINA and setting up processing environment for near real-time production
- Target to begin informal demonstrations & interaction with users for the coming winter season
- Will segue to NPP/VIIRS Day Night Band (DNB) pending successful launch (late October) and instrument checkout.

→ Nocturnal detection of clouds, sea ice, snow cover, and other features at high latitudes during Winter months (when sunlight observations not available)



# System Developments



## ■ AWIPS2

- **D. Molenar & H. Gosden attended hands-on AWIPS2 developer training session held by Raytheon on August 17 & 18, 2011.**
- **Worked closely with Raytheon software developers to spec satellite data display and analysis capabilities that will be needed in AWIPS2 to process Proving Ground simulated and eventual real GOES-R products.**
- **Learned how to implement new products & capabilities in AWIPS2 via Java and python**
- **Procured advanced hardware to implement new AWIPS2 system at CIRA, configuration is underway. First task will be test of McIDAS format data ingest & display**
- **Issues – new system development**

# Conference / Meetings

## Recently Attended:

- **July 2011: OCONUS workshop in Juneau, AK (Mark DeMaria, Steve Miller)**
- **July 2011: AWIPS II workshop in Omaha , NE (Deb Molenar, Hiro Gosden)**
- **September 2011: Visited CYS WFO, follow-up visit pending**

## Upcoming:

- **12-16 September 2011: NHC (Mark DeMaria)**
- **September 2011: Pacific Region Proving Ground meeting in Hawaii (John Knaff)**
- **October 2011: CYS and BOU WFO Fall Workshops (Ed Szoke, Dan Lindsey)**