

Weekly Report

RAMMB / CIRA
Cooperative Research Program Division (CoRP)
STAR/NESDIS
National Oceanic and Atmospheric Administration (NOAA)

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Products and Applications

New TC Real Time product: C. Slocum, M. Niznik, and J. Forsythe added tropical cyclone centric CIRA Advected Layered Precipitable Water imagery as a new product to the Regional and Mesoscale Meteorology Branch Tropical Cyclone Real Time website. The Advected Layered Precipitable Water (ALPW) imagery allows Northern Hemisphere tropical cyclone forecasters to diagnose moisture content near tropical cyclones and assess potential changes to storm structure and maximum sustained wind. Forecasters can use this information to improve hazard and impact communication. CIRA is in the process of transferring the ALPW to NOAA operations 2023. In the interim, CIRA provides the product hourly to National Centers and Weather Forecast Offices. The figure highlights the ALPW imagery for Hurricane Agatha prior to landfall and shows ample low-level moisture with some drier air to the south of the tropical cyclone is not being entrained by the storm. For a loop of Hurricane Agatha on the Tropical Cyclone Real Time website, see the [loop](#):

(POC: C. Slocum, StAR, Christopher.Slocum@noaa.gov, 970-491-2409, Funding: PDRA; J. Forsythe, M. Niznik, CIRA, Funding: CIRA/JPSS)

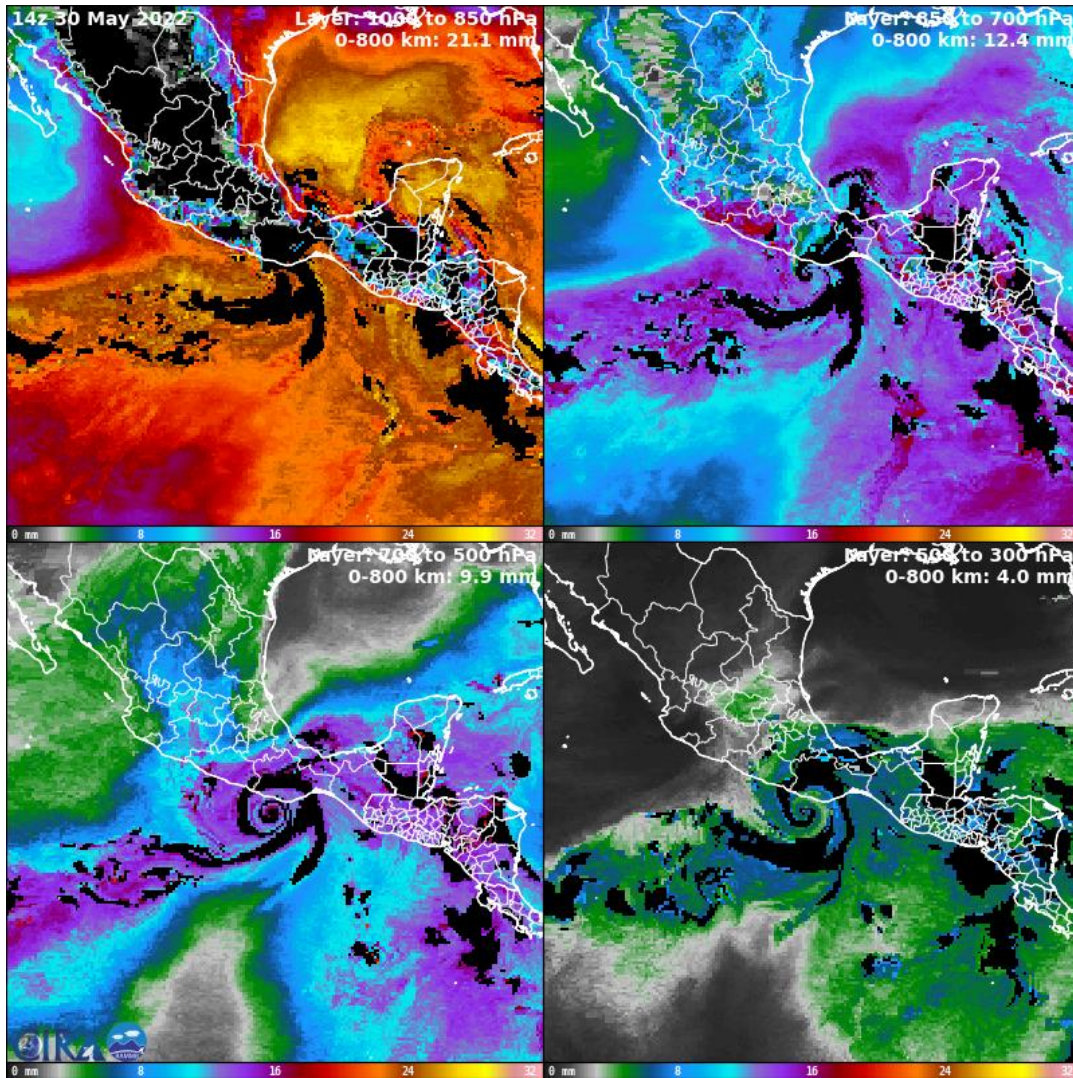


Figure. The CIRA Advected Layer Precipitable Water product centered on Hurricane Agatha on 14 UTC 30 May 2022 prior to landfall on the coast of Oaxaca, Mexico. The four panels show the Advected Layered Precipitable Water imagery for the surface to 850 hPa (top left), 850 to 700 hPa (top right), 700 to 500 hPa (lower left), and 500 to 300 hPa (lower right).

High-resolution GeoColor now available on SLIDER: Perhaps not well known, a half-kilometer (HKM) resolution version of *GeoColor* has been available for the GOES-17 CONUS (PACUS) sector on CIRA’s SLIDER website (<https://rammb-slider.cira.colostate.edu>) for several years. In preparation for GOES-18 first light data, this high resolution version of the *GeoColor* algorithm was adapted for the GOES-18 CONUS and Mesoscale sectors, and was used in the “Earth from Orbit” video publicizing the high quality of the GOES-18 ABI first light data (<https://www.nesdis.noaa.gov/news/earth-orbit-noaa-debuts-first-imagery-goes-18>). Now, the HKM *GeoColor* algorithm is available from all of the Mesoscale sectors on GOES-16 and GOES-17, and will continue to be produced from GOES-18 (CONUS/PACUS and Mesoscale) moving forward (following its drift to the GOES-West position). Last year, when the *GeoColor* algorithm was implemented in AWIPS “on-the-fly”, forecasters had access to the HKM version for the

CONUS/PACUS, Mesoscale, and special (i.e. Alaska and Puerto Rico) sectors from the start. Now this capability is available for all SLIDER users. The figure below shows a comparison between the original 1 km-resolution version and the new HKM version for GOES-16 Meso1 at 18:25 UTC, 1 June 2022. Full Disk *GeoColor* imagery on SLIDER remains at 1 km resolution as the HKM algorithm is too computationally expensive to produce imagery at 10 min. cadence. (POC: C. Seaman CIRA, curtis.seaman@colostate.edu, S. Miller, K. Micke, M. Niznik, CIRA, D. Lindsey and B. Line, StAR. Funding: GOES-R)



Figure. GeoColor images produced at 1 km resolution (left) and 500 m/HKM resolution (right) over eastern North Carolina (18:25 UTC, 1 June 2022).

Awards and Recognition

Publications (Citation: followed by a short Summary: (Why & so what), & detailed summary):

Media Interactions and Requests

Blog Posts and Social Media

New Satellite Liaison Blog Post: Bill Line published a blog post titled “Memorial Day 2022 Severe”. The post captured a few examples of how satellite imagery was utilized operationally during the event, in addition to an example of how multispectral imagery could have been used to track boundary interactions leading to evening convective initiation. See Figure below. The link to the post can be found [here](#). (POC: B. Line, CoRP/RAMMB, bill.line@noaa.gov) Funding: PDRA

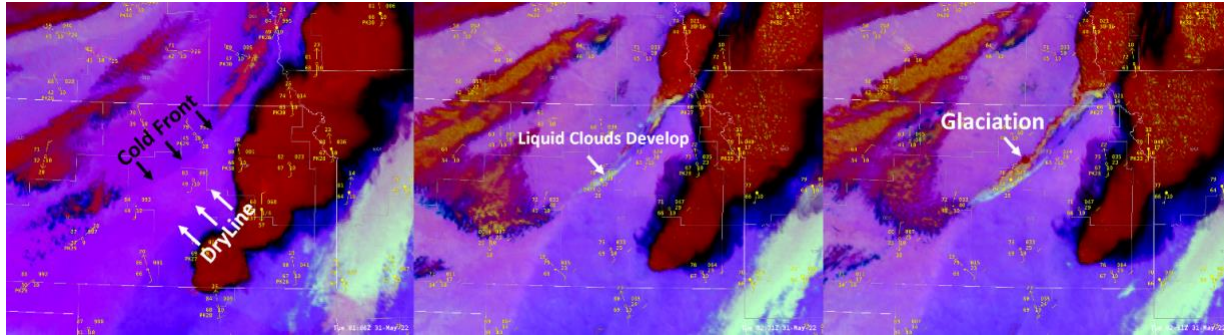


Figure. As time progresses left to right, the GOES Nighttime Microphysics RGB imagery captures boundary movement and interaction in great detail, along with evolution of clouds from liquid to ice (i.e., glaciation).

Travel, Workshops, Conferences, and Meeting Reports

CIRA meets with the Ocean Prediction Center (OPC): An informal meeting between OPC and CIRA was held on 25 May. This forum was designed to allow OPC to communicate their operational needs, and for CIRA to communicate what is currently available or planned to improve diagnosis and forecasting of certain weather phenomena of particular importance to OPC. OPC participants were Frances Achorn, James Clark, Javier Villegasbravo, Michal Folmer, and Joe Sienkiewicz. Actions included making sure CIRA's data push of data via the Local Data Manager (LDM) for WPC and OPC gets migrated to a more permanent location, contacting NHC about how some of the CIRA products are being created in their operations, and checking firewall issues.

(POC: Steve Miller, Steven.Miller@colostate.edu, K. Musgrave, A. Schumacher, J. Dostalek, CIRA, J. Knaff, STAR, Funding: GOES-R, JPSS)

CIRA-NOAA Cloud Team tag-up meeting: An informal meeting between CIRA and the NOAA Cloud Team Lead was held on June 1st. Mark Kulie (NOAA/NESDIS/STAR/ASPB), William Straka (CIMSS), Yoo-Jeong Noh, John Haynes, Steve Miller, Renate Brummer (all CIRA) attended. CIRA provided updates on recent Cloud Team research and product development activities, and STAR annual operating plans/future algorithm development activities were discussed.

(POC: Yoo-Jeong Noh, CIRA, 970-491-8907, Yoo-Jeong.Noh@colostate.edu, Funding: JPSS and GOES-R)

Training and Education activities

Two NOAA summer interns begin internships: Alvin Cheung and Marshall Baldwin arrived at CIRA on May 31 to begin their NOAA summer internships. Alvin is a NOAA Lapenta intern who is rejoining CIRA for a second summer after his REU internship last year. He will be advised by Chris Slocum and John Knaff, both of NOAA STAR. Marshall is a NOAA Hollings Scholar, and will be advised by Chris Slocum of NOAA STAR and Marie McGraw of CIRA.

(POC: C. Slocum, NOAA STAR, christopher.slocum@noaa.gov; M. McGraw, CIRA, Marie.Mcgraw@colostate.edu; J. Knaff, STAR, John.Knaff@noaa.gov)

Future Meetings and Events (dates, meeting/event, location, staff involved)

Other

Manuscript review: K. Haynes reviewed a manuscript for *Geophysical Model Development*. (POC: K. Haynes, CIRA, Katherine.Haynes@colostate.edu)