

Weekly Report

CIRA
STAR/NESDIS
National Oceanic and Atmospheric Administration (NOAA)

Submitted by: Maranda Hutson
Date of Submission: 06 March 2026
Prepared by: CIRA and STAR contributors

Products and Applications

Snow/Cloud-Layers Product Updates: The Snow/Cloud-Layers product developed at CIRA utilizes 11 spectral bands to discriminate snow and ice from clouds. The information from these bands is combined to highlight snow and ice in white, low-level (liquid) clouds in yellow, and high/deep clouds in magenta against a snow-free background land surface in green (Fig. 1). Unfortunately, the Advanced Baseline Imager (ABI) on GOES-East and GOES-West lacks an equivalent to the VIIRS Day/Night Band, which precludes the detection of snow at night. As a result, the original version of the Snow/Cloud-Layers product reverted to monochromatic (grayscale) IR-based imagery that was not particularly useful at night. A new algorithm has been developed and evaluated over the CONUS/PACUS sectors the past two winters that tracks where snow is identified during the day, and uses this snow mask to help forecasters track where snow is at night, assuming no melting or accumulation overnight. This has allowed us to modify the ABI Snow/Cloud-Layers product to more closely match what is available from VIIRS (referred to as the VIIRS Snow/Cloud Discriminator) and make the nighttime side of the Snow/Cloud-Layers product appear similar to the daytime side (Fig. 2). Coincident with this update, the new algorithm has also been modified to work with Himawari-9 AHI, GK2A AMI and Meteosat-12 FCI, and is now running for all sectors for these satellites on SLIDER. Simply select “Snow/Cloud-Layers” from the product menu: <https://slider.cira.colostate.edu> (POC: C. Seaman and S. Miller, CIRA; curtis.seaman@colostate.edu; steven.miller@colostate.edu) Funding: GOES-R

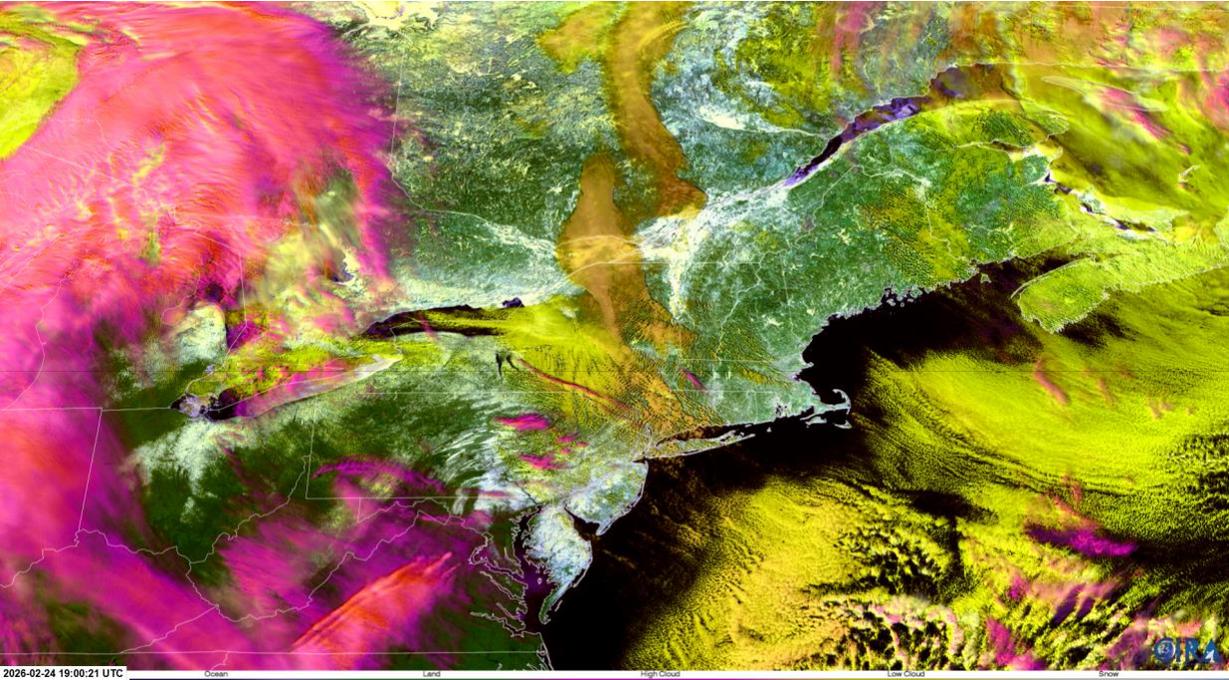


Figure 1. The Snow/Cloud-Layers product from GOES-19 ABI (19:00 UTC, 24 February 2026) showing the aftermath of a hurricane-force blizzard that impacted the Northeast US (21-23 February 2026).

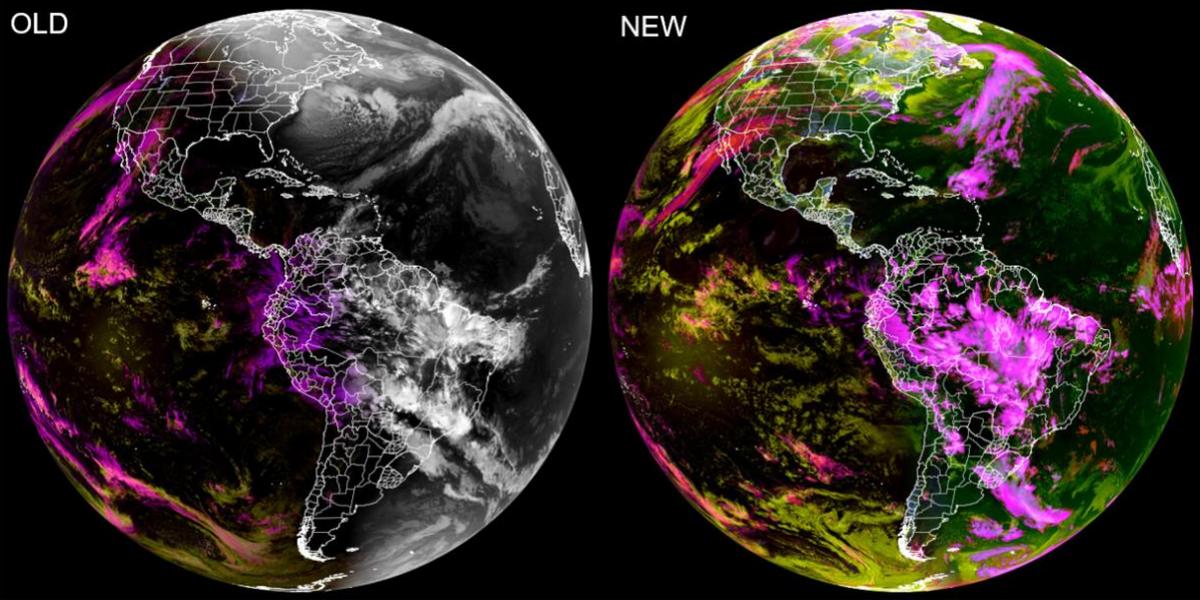


Figure 2. Comparison between the original (left) and updated Snow/Cloud-Layers product. In each image, the left half is daytime, and the right half is nighttime.

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

Awards and Recognition

Media Interactions and Request

Blog Posts and Social Media

Travel, Workshops, Conferences, and Meeting Reports

Training and Education Activities

JPSS Teletraining this week: J. Torres (CIRA) led a VIIRS Flood Map teletraining session on 3 March 2026; one forecaster from NWS WFO - Fairbanks, AK, attended the session. Additionally, Torres led a VIIRS Active Fires teletraining session on 4 March 2026; one forecaster from NWS WFO - Twin Cities / Chanhassen, MN, attended the session. (POC: Jorel Torres, CIRA, Jorel.Torres@colostate.edu, Funding: JPSS)

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

Other

CIRA FY25 GEO Project Review: CIRA had a FY25 GEO Project Review on March 2nd. CIRA Principal Investigators presented GEO project research results, achieved by their project teams during the first 6 months of the current period of performance (Sep 2025 – Feb 2026), to members of the NOAA/NESDIS Office of Geostationary Earth Orbit Observations. A total of 13 talks were presented. (POC: R. Brummer, CIRA, Renate.Brummer@colostate.edu, Funding: NESDIS GEO Program).

CIRA/NESDIS Training Development for National Weather Service Users

Dan Bikos

Other Team Members: Erin Sanders

Passive Retrievals of 3D Optical Flows with Information Leveraged from Environmental Sounders (PROFILES) Project Update

Jason Apke, Stephanie Ortland,
David Santeck, Thomas Rink, and Jason Otkin²

¹ Cooperative Institute for Research in the Atmosphere (CIRA), Fort Collins, CO
² Cooperative Institute for Meteorological Satellite Studies (CIMSS), Madison, WI

GOES-R Series Satellite Imagery



Dakota Smith
Cooperative Institute for Research in the Atmosphere

The Community Radiative Transfer Model (CRTM) Support for Next-Generation Geostationary Hyperspectral Sensors

Yingtao Ma^{1,2}, Yong Chen², Banghua Yan²

¹ Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State Univ. (CSU)
² STAR/NESDIS/NOAA

CIRA/NESDIS GOES Training Development for WMO-CGMS International VLab Users

Erin Sanders

GOE Project Review: 2 March 2026

OCTANE Readiness Level Advancement NOAA Project Update

Jason Apke, Stephanie Ortland¹

¹ Cooperative Institute for Research in the Atmosphere (CIRA), Fort Collins, CO

GeoSLIDER Geostationary Satellite Loop Interactive Data Explorer in Realtime

Curtis Seaman (PI)
Zayd Amundson, Dylan Canfield, Kevin Micke, Aniket Tomar, Natalie Tourville

NOAA Project Lead: Andy Heidlinger (NOAA/NESDIS/GEO)

GREMLIN: GOES Radar Estimation via Machine Learning to Inform NWP

Kyle Hillburn¹

¹ Cooperative Institute for Research in the Atmosphere (CIRA) / CSU

GOES-R AWG Cloud Team Project

March 2, 2026

John M. Haynes

Yoo-Jeong Noh, Brandon Daub, Chuck White, Cas Johnson
Cooperative Institute for Research in the Atmosphere (CIRA) / Colorado State University

GeoXO Science / Product Support

March 2, 2026

John M. Haynes

Jason Apke, Jack Dostalek, Cas Johnson, Yoo-Jeong Noh, Stephanie Ortland, Jesse Turner, Chuck White, Katurah Zahler
Cooperative Institute for Research in the Atmosphere (CIRA) / Colorado State University

GOES-R/GeoXO project reviews Satellite Application Development for NHC

Presented by:

Kate Musgrave

Cooperative Institute for Research in the Atmosphere (CIRA)
@ Colorado State University

Project Team:
Mark DeMaria, Galina Chirkova, Zhixing Ruan, Robert DeMaria
John Kaplan (NOAA/AOML/HRD)

GOES-R/GeoXO project reviews MetSat and Tropical Proving Ground Projects

Presented by:

Daniel Nietfeld **Mark DeMaria**

With contributions from Project PIs:
Curtis Seaman, John Haynes, YJ Noh, Jason Apke, Kyle Hillburn,
Dan Bikos, John Forsythe, Galina Chirkova

Cooperative Institute for Research in the Atmosphere (CIRA)
@ Colorado State University

GOES-R AWG Imagery/ACES-HAI

GOES-R Algorithm Working Group for Imagery and Advanced Concepts Enabling Situational and Hazards Awareness via Imagery

Curtis Seaman and Steve Miller (Co-PIs)
Jason Apke, Leigh Cheatwood-Harris, Galina Chirkova, Coleman McClelland, Deb Molenaar,
Stephanie Ortland, Matt Rogers, Dakota Smith, Jackson Tobin, Jesse Turner, Chuck White

NOAA Project Lead: Bill Line (NOAA/NESDIS/STAR)

Figure: Combination of CIRA GEO Project Review presentations title slides