



# McIDAS-X and -V at RAMMB/CIRA

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# McIDAS-X and -V at RAMMB/CIRA

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RAMMB/CIRA is a NOAA/NESDIS/StAR Cooperative Institute focused on development of advanced satellite data products

- Several paths are utilized to get experimental satellite products to field forecasters for testing and evaluation as important part of R2O
- McIDAS has been a critical component of both product and training development since early 1990's





# McIDAS-X and -V at RAMMB/CIRA

- **RAMSDIS** (RAMMB Advanced Meteorological Satellite Demonstration and Interpretation System (US NOAA) - 1994)
  - McIDAS-X based low cost PC
  - 640x480 256 color display
  - Highly successful 'shoestring' project
  - Provided 'high res' NESDIS GVAR data to NWS FO's for 7 years prior to AWIPS deployment
  - Eventually provided GVAR data to the global weather community
  - RAMSDIS Online still exists for web based data access



<http://rammb.cira.colostate.edu/ramsdiskonline/>





# McIDAS-X and -V at RAMMB/CIRA

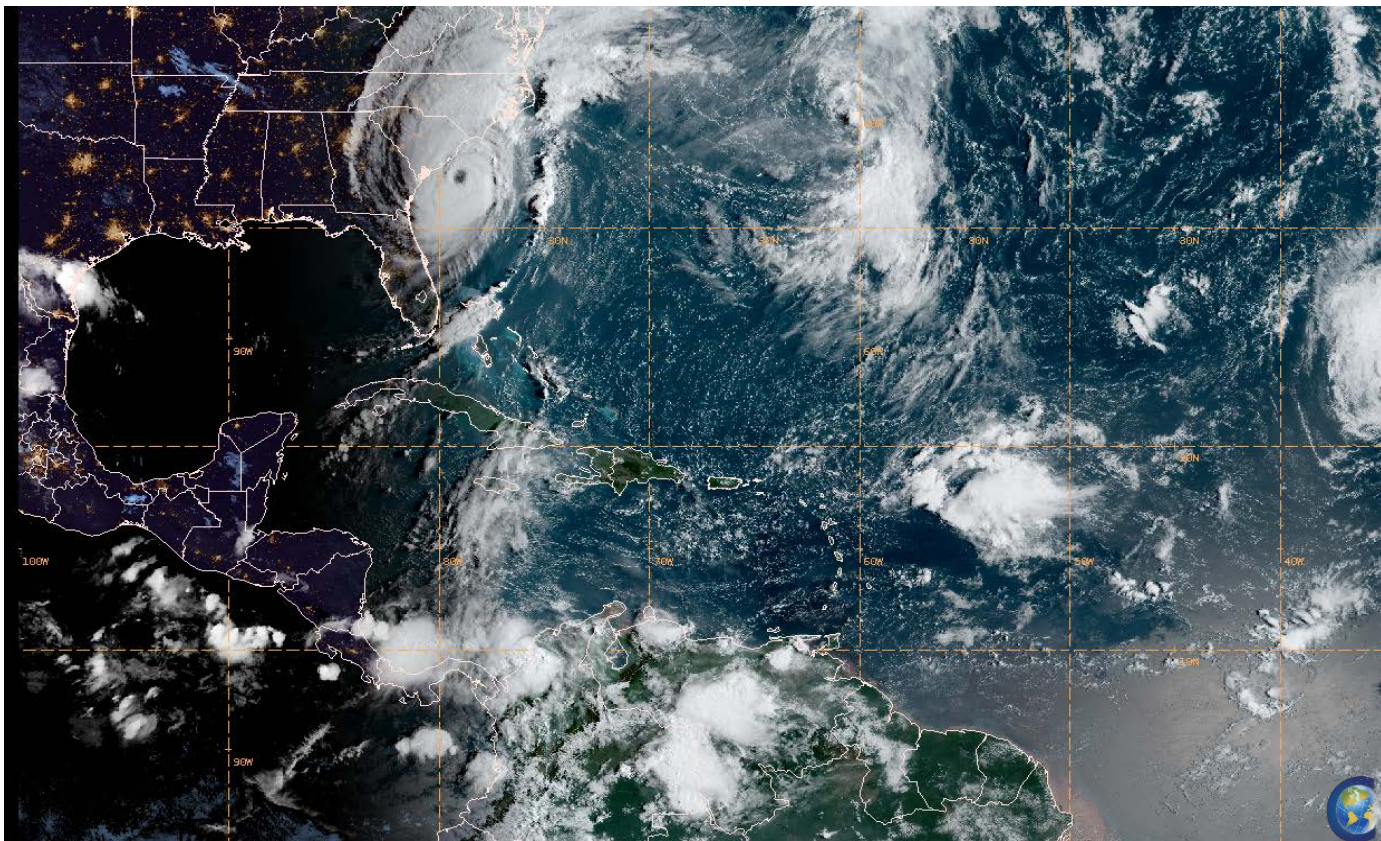
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- Once AWIPS I was deployed, experimental satellite products in McIDAS AREA file format were sent to WFO's via the LDM
- McIDAS-X was used extensively to provide simulated GOES-R products for AWIPS II to prepare forecasters
- With the successful deployment of GOES-16 and 17, satellite products created with McIDAS-X are utilized to exploit the advanced capabilities of the satellites and of AWIPS II display



# McIDAS-X and -V at RAMMB/CIRA

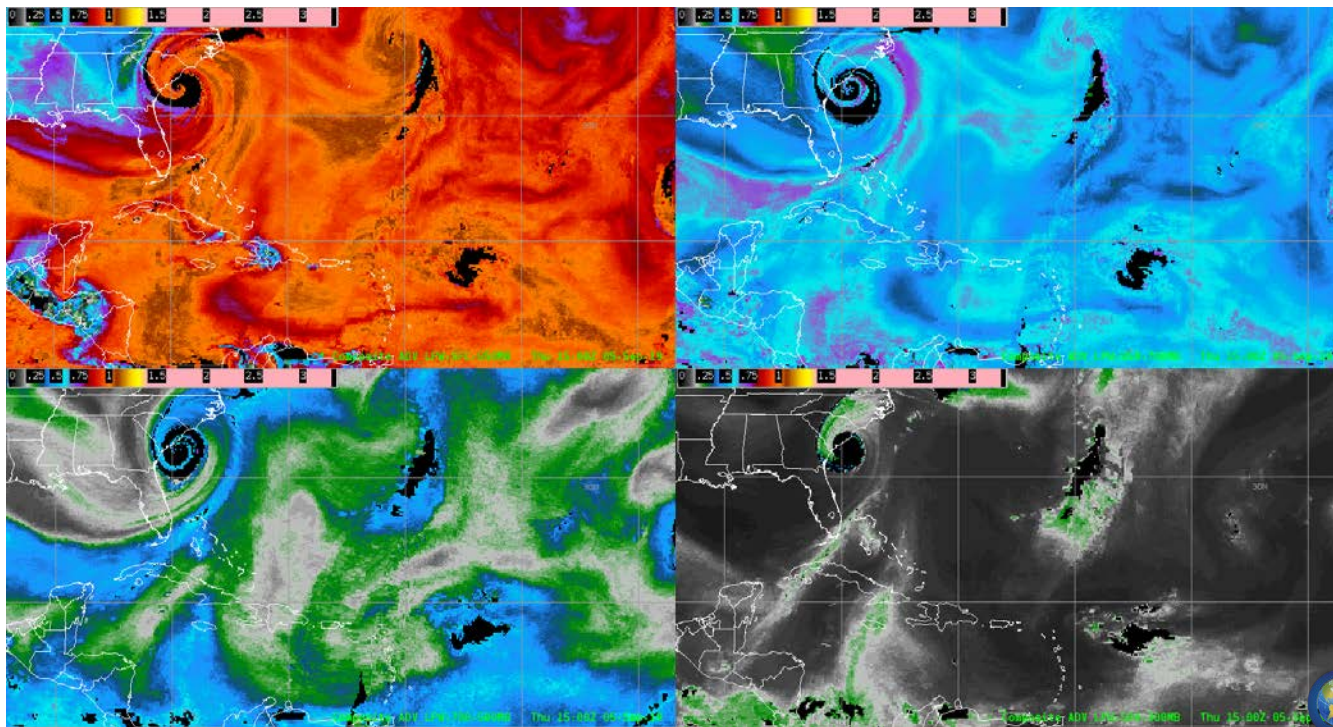
- GOES-16/17, H8 GeoColor
  - 24 bit - red, green and blue AREA files generated at CIRA
  - Used at the NHC media desk for press briefings
  - On path for operational implementation at NESDIS





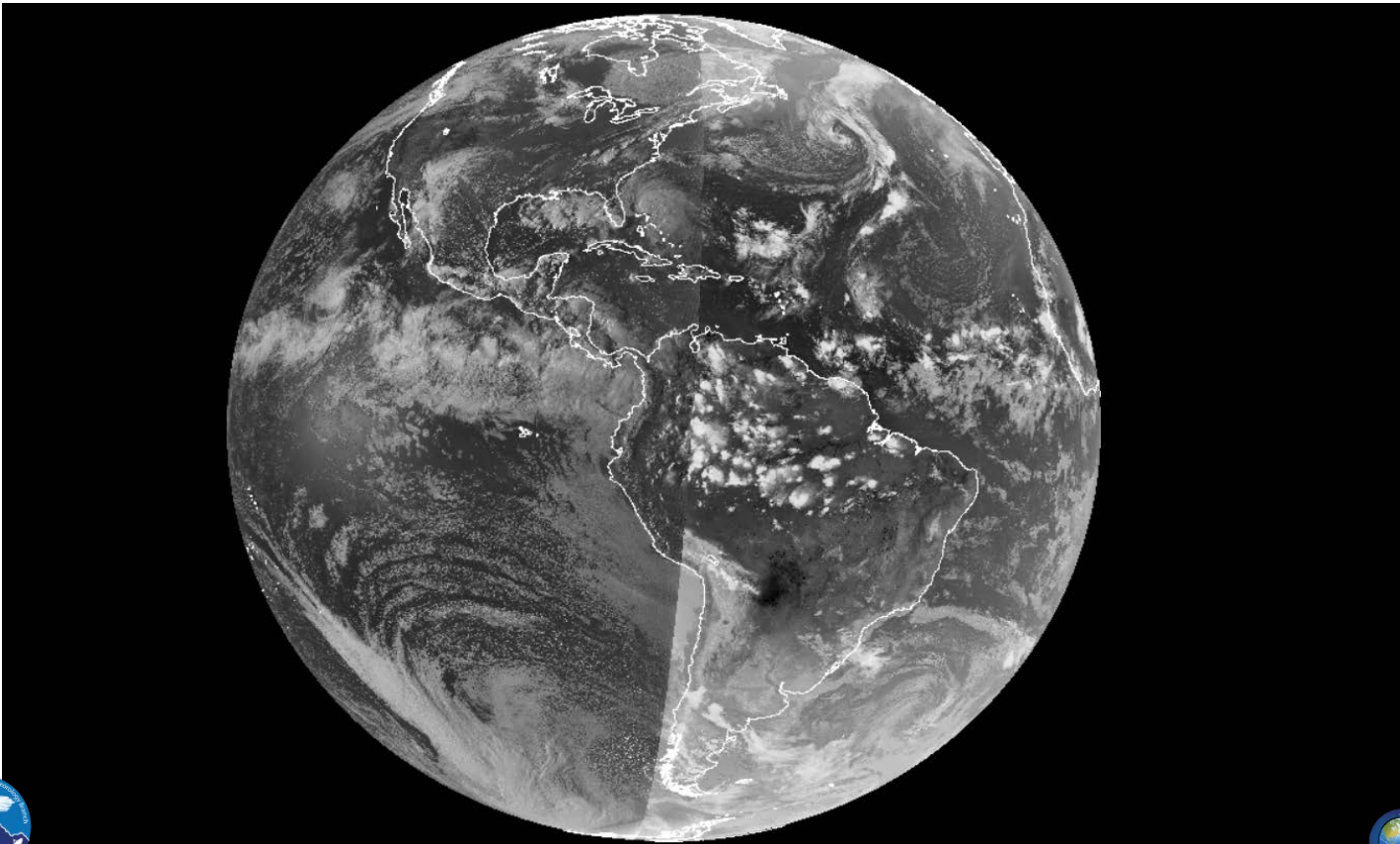
# McIDAS-X and -V at RAMMB/CIRA

- Advected Layered Precipitable Water
  - AREA files, SPoRT McIDAS netCDF3
  - Microwave Integrated Retrieval System (MiRS) retrievals of moisture and temperature derived from 7 polar orbiting satellites
  - Offers a 4D structure of water vapor (sfc-850, 850-700, 700-500 and 500-300 hPa)
  - On path for operational implementation at NESDIS



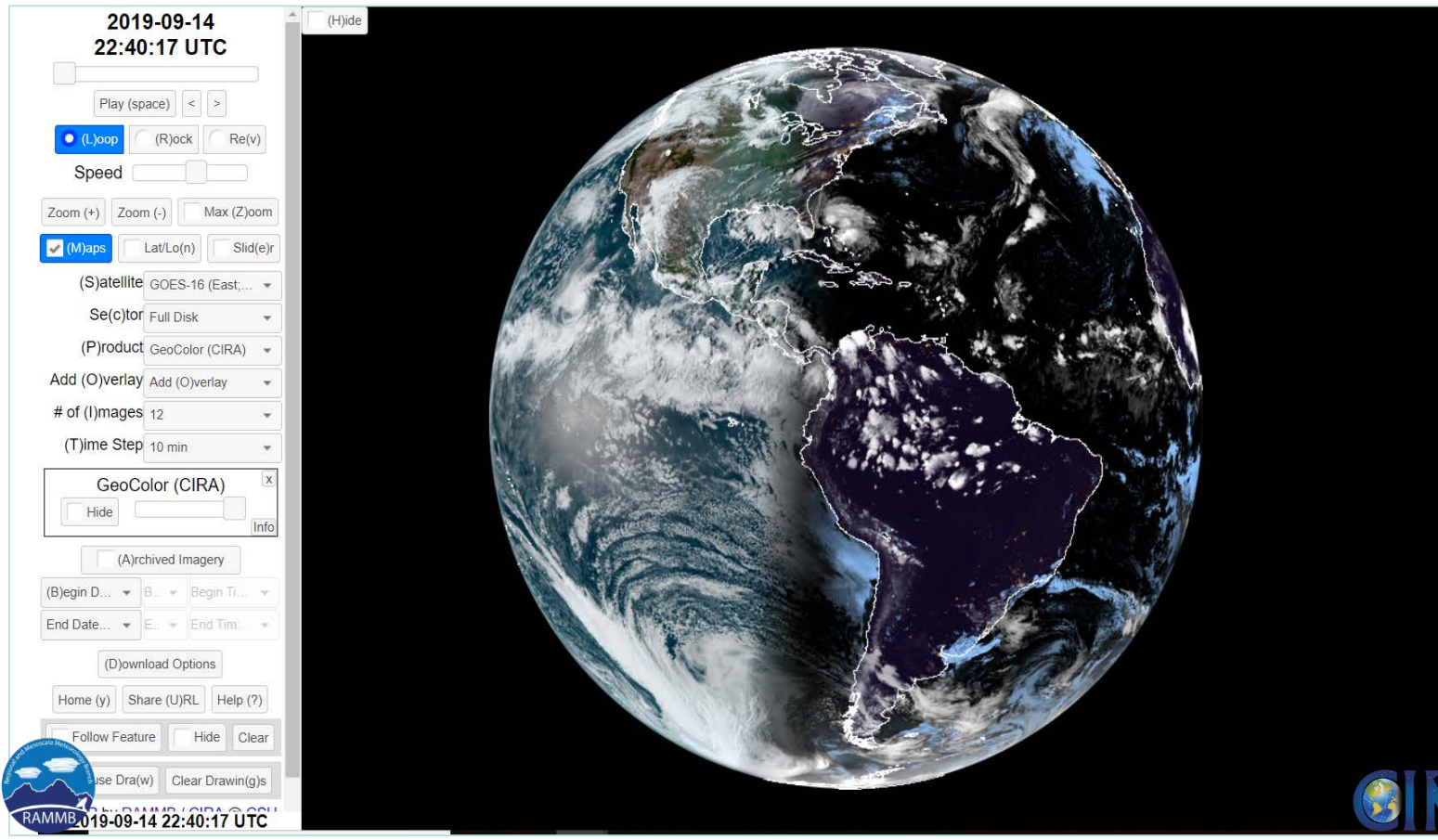
# McIDAS-X and -V at RAMMB/CIRA

- GOES 16/17 Proxy Visible
  - Uses IR channels to create visible-like imagery at night, with emphasis on displaying low-level clouds



# McIDAS-X and -V at RAMMB/CIRA

- Satellite Loop Interactive Data Explorer in Real-Time (SLIDER)
  - Provides access to every pixel from the GOES-16 & 17, Himawari-8, SNPP and NOAA-20 satellites in real time



The screenshot displays the SLIDER web interface. On the left is a control panel with the following elements:

- Timestamp: 2019-09-14 22:40:17 UTC
- Buttons: Play (space), <, >
- Controls: (L)oop (selected), (R)ock, Re(v)
- Speed: A slider bar.
- Zoom: Zoom (+), Zoom (-), Max (Z)oom
- Map controls: (M)aps (selected), Lat/Lo(n), Slid(e)r
- Satellite: (S)atellite GOES-16 (East, ...)
- Sector: Se(c)tor Full Disk
- Product: (P)roduct GeoColor (CIRA)
- Overlay: Add (O)verlay Add (O)verlay
- Images: # of (I)mages 12
- Time Step: (T)ime Step 10 min
- GeoColor (CIRA) window: Hide, Info
- (A)rchived Imagery
- Time range: (B)egin D..., B..., Begin Ti..., End Date..., E..., End Tim...
- (D)ownload Options
- Home (y), Share (U)RL, Help (?)
- Follow Feature, Hide, Clear
- Use Dra(w), Clear Drawin(g)s

The main display area shows a satellite image of Earth, centered on the Americas. A small '(H)ide' button is visible in the top left corner of the image area. In the bottom left corner of the interface, there is a RAMMB logo and the text 'RAMMB 019-09-14 22:40:17 UTC'. In the bottom right corner, there is a CIRA logo.





# McIDAS-X and -V at RAMMB/CIRA

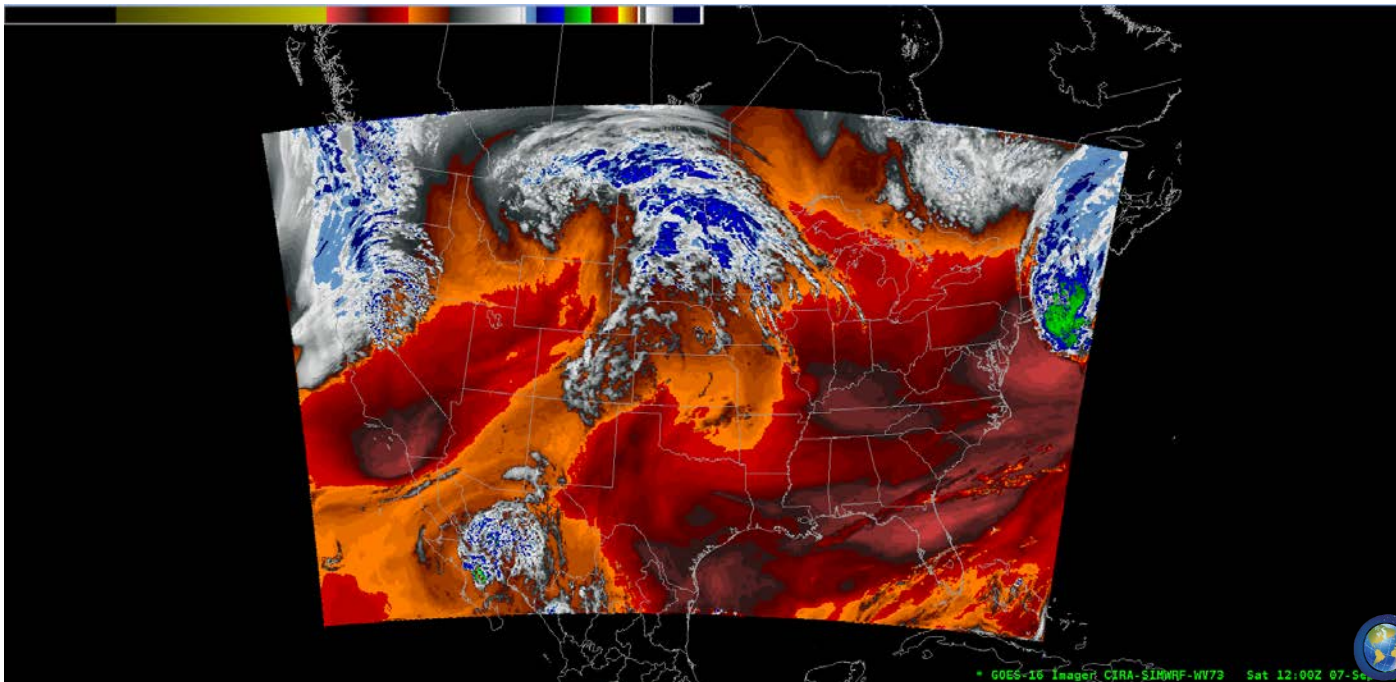
## ■ SLIDER

- **McIDAS is used extensively in processing imagery for SLIDER**
- Because the full resolution datasets are so large, users are not able to access them in real time with conventional ways of viewing satellite imagery over the web
- McIDAS is utilized to create full-resolution imagery for the native bands for each sector of the GOES-16, GOES-17, Himawari-8, SNPP and NOAA-20 satellites
- Called from a Python wrapper so that the giant images it produces can then be chopped up into small "image tiles" for use in the front end of the SLIDER interface.
- <http://rammb-slider.cira.colostate.edu>



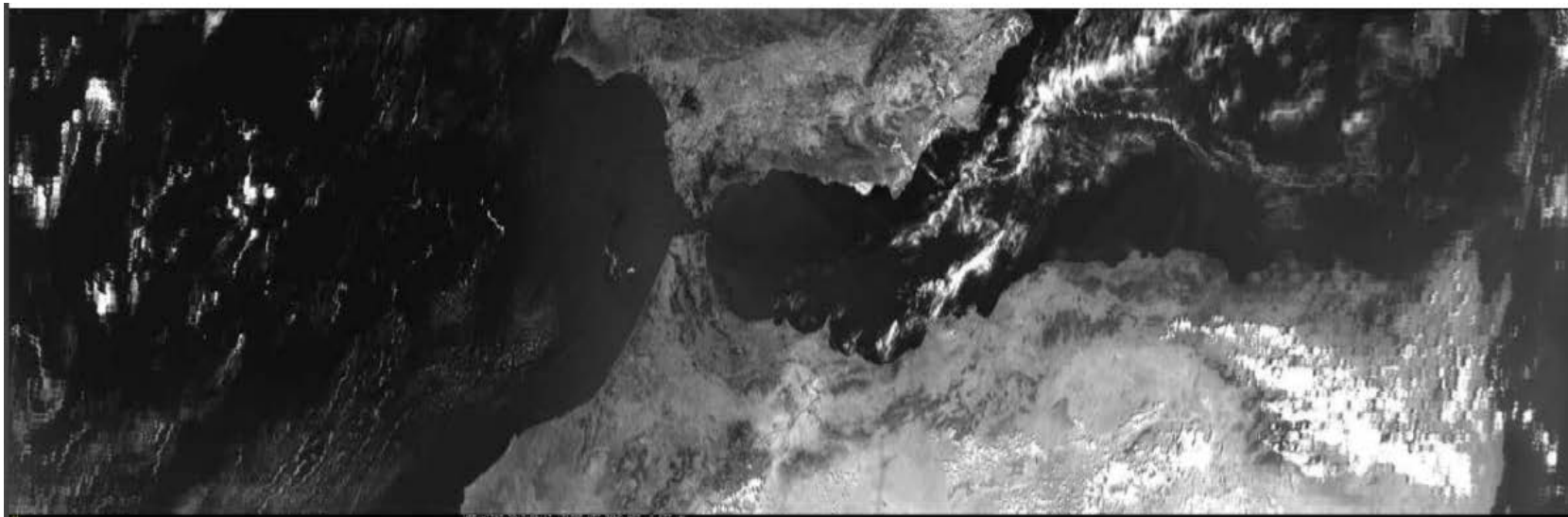
# McIDAS-X and -V at RAMMB/CIRA

- Simulated WRF and NAM imagery
  - Forecast cloud model output is created as imagery in a McIDAS AREA file
  - Can be used to evaluate each model run
  - For example, one might compare a simulated water vapor band to observed GOES-R imagery from 12-18 UTC to see how well the model is handling the timing and location of upper level features, such as shortwaves
  - Also used as visual forecast aid



# McIDAS-X and -V at RAMMB/CIRA

- VIIRS Granule Display



Full 90-second granule (768 x 3200)



# McIDAS-X and -V at RAMMB/CIRA

## ■ VISIT Teletraining

VISIT - Virtual Institute for Satellite Integration Training

Not secure | rammb.cira.colostate.edu/training/visit/

### VISIT

### Virtual Institute for Satellite Integration Training

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- VISIT Satellite Help Desk
- The VISIT Program
- VISIT Contributors
- VISIT FAQ
- Links / Tutorials
- RAMSDIS Online
- Quick Reference

SatFCG: Satellite Foundational Course for GOES-R

**JPSS** NOAA NASA

**NATIONAL WEATHER SERVICE**

**FOUNDATIONAL COURSE**

VISIT is a joint effort involving NOAA-NESDIS Cooperative Institutes, the [National Environmental Satellite Data and Information Service \(NESDIS\)](#), and the [National Weather Service \(NWS\)](#). The primary mission of VISIT is to accelerate the transfer of research results based on atmospheric remote sensing data into NWS operations using distance education techniques.

[Teletraining Calendar, Signup and Installation](#)

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9:31 PM  
9/14/2019

**CIRA**



# McIDAS-X and -V at RAMMB/CIRA

## ■ Central and South America Outreach

RAMMB: RAMSDIS Online - Cent x +

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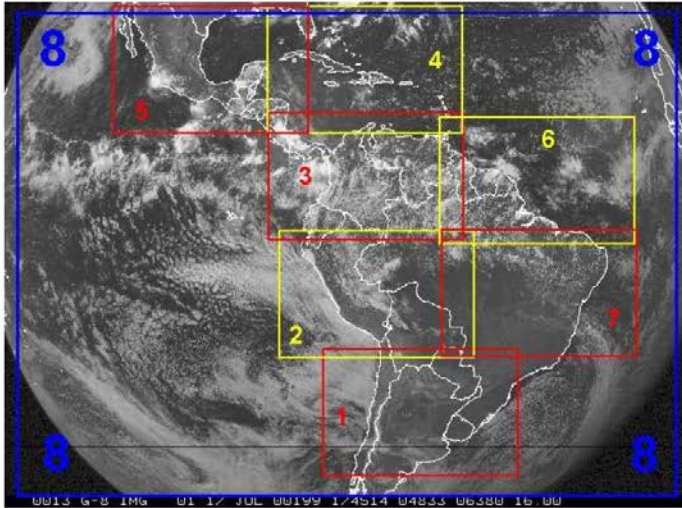
RAMMB

### Central and South America and the Caribbean

Links to Specific Sections:

[1: Southern South America](#)
[2: West central South America](#)
[3: Northwest South America](#)
[4: Caribbean](#)
[5: Mexico and Central America](#)
[6: Northeast South America](#)
[7: East central South America](#)
[8: South America](#)
[Central America](#)
[Products from Polar-orbiting Satellites](#)

Each sector of the imagery is divided up as shown in the following picture (click image to jump to section)



0013 6-8 IMG 01 17 JUL 00199 174514 04833 06380 16 00

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