

The Art and Beauty of GOES-16

Frederick R. Mosher; Professor Emeritus

Chris Herbster

Embry-Riddle Aeronautical University, Daytona Beach, FL

1.0 INTRODUCTION

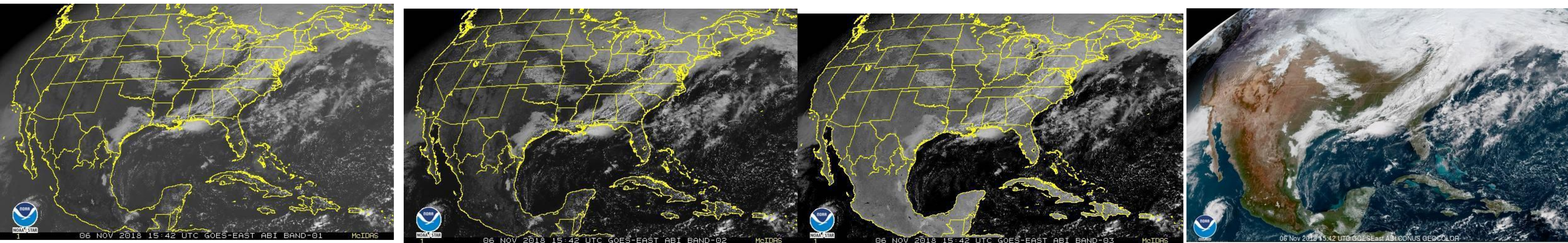
GOES 16 channels were selected for scientific purposes

NOAA developed 25 “day one” GOES baseline products +30 additional products

NOAA GOES web page has 16 raw channels and a Geo-Color image, but no other derived products

Only three raw channels are useful; visible, water vapor, and infrared

Need derived products to show information in other channels



GOES channel 1

GOES channel 2

GOES Channel 3

Derived Geo-Color

2.0 Hubble Derived Images

Hubble Space Telescope had a troubled beginning; delays, error in optics, etc.

Public perception of Hubble changed after release of “Pillars of Creation” image

The image forever changed how astronomers present images to the public

NASA has hired artists to help astronomers make beautiful images for release to the public



False color RGB image with oxygen image going to blue gun, hydrogen image going to green gun and sulfur image going to red gun

Hubble and astronomy images are routinely used for screen savers, posters, and books

Having public enthusiasm for the NASA astronomy program has resulted in continued generous funding by the American public for the Hubble and other NASA stellar imaging programs.

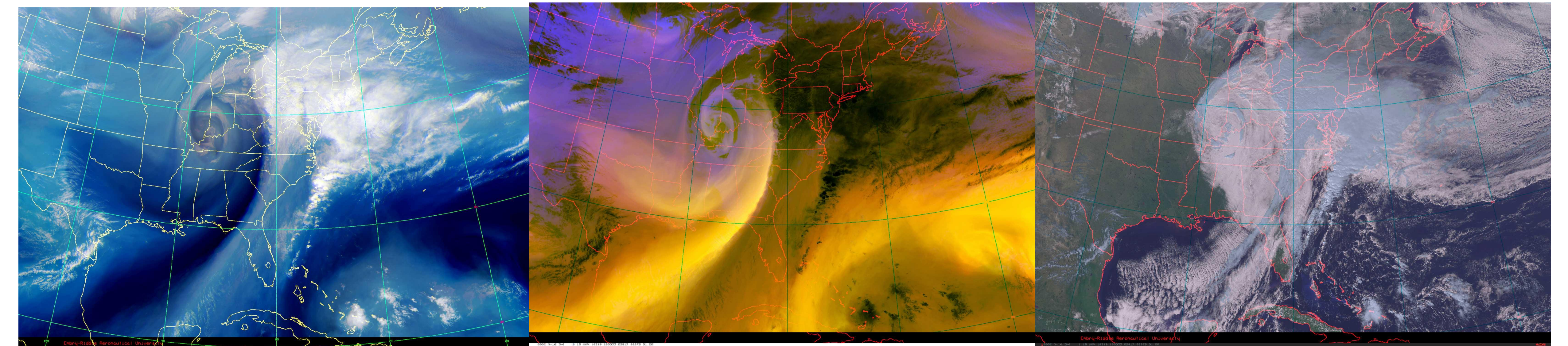
3.0 Alternative Derived GOES Images

NOAA GOES derived products generated and sent to NWS via NOAAport

Many of the derived products require training for use

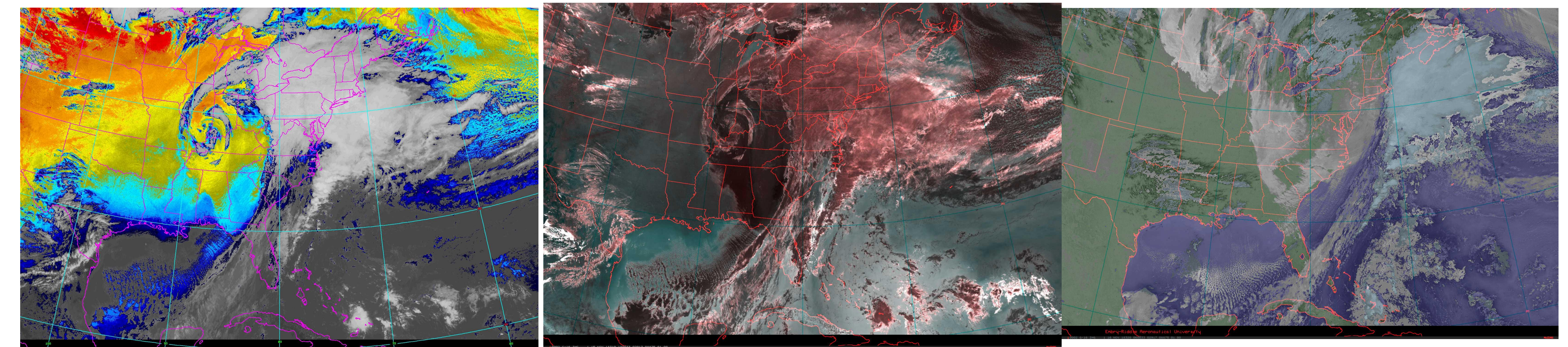
Often the object of the product show up in subtle changes in the colors

ERAU has developed some new, alternative derived products available at wx.erau.edu:



3 channel water vapor 11/15/2018 at 18Z JETS4

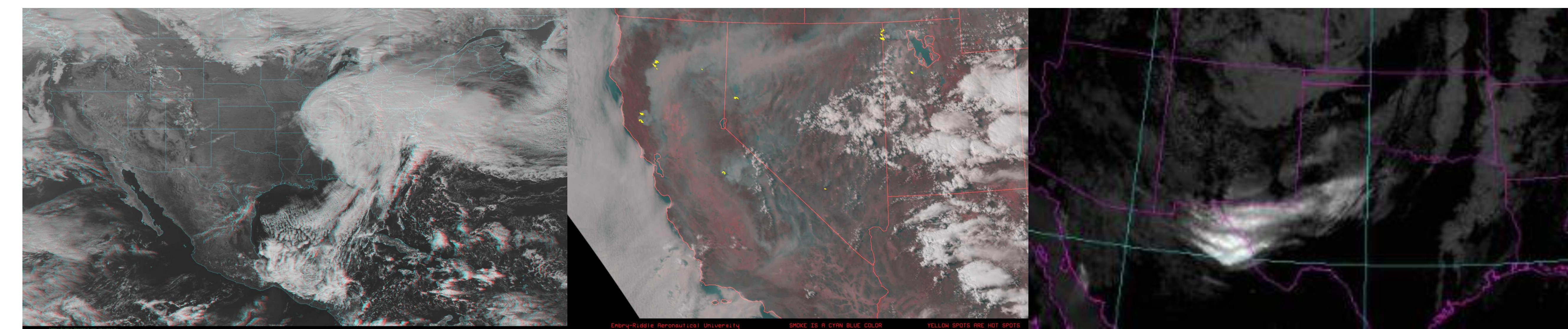
Airmass , same time Day/Night color visible; same time



Ozone image; same time

Precipitable Water (PW) same time

Day/Night color visible 12 hr later



3D anaglyph cyan/red image same time Smoke 07/28/2018 at 22:37Z

Dust/Ash at 04/13/2018 at 22:15Z

4.0 Recommendations

- NOAA should put all of its operationally derived GOES products on its public web page.
- NOAA should provide graphic art assistance to product developers
- NOAA should reopen opportunities to develop new or improved derived GOES products
- NOAA should monitor the downloads of raw channels on web site, and reduce number raw image channels (suggest visible, water vapor, and infrared images)