

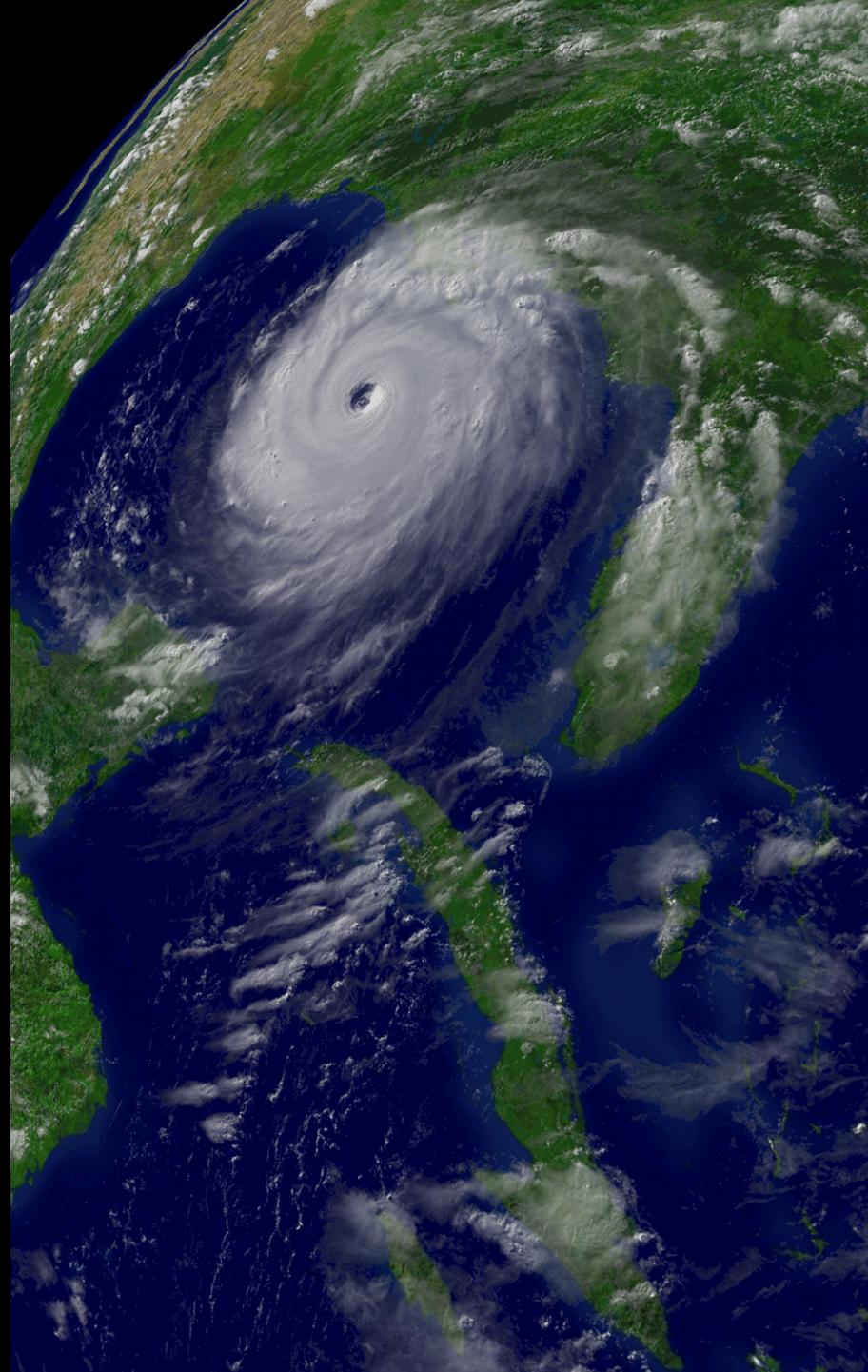
Dan Pisut

NOAA Environmental Visualization Lab

Dan.Pisut@noaa.gov

# ADVANCED GRAPHICS USING MCIDAS-X AND -V

Hurricane Katrina; August 29, 2005 at 1545z  
McIDAS-X and Boeing/Autometric Edge



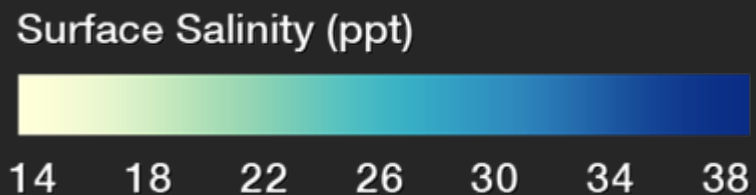
# Top 10 Reasons to Love McIDAS

- ❑ Shapefiles
- ❑ Any netCDF
- ❑ Custom analysis
- ❑ Real-time access
- ❑ Consolidated access
- ❑ Flexibility
- ❑ Free
- ❑ Time saver
- ❑ Resolution
- ❑ Batch processing



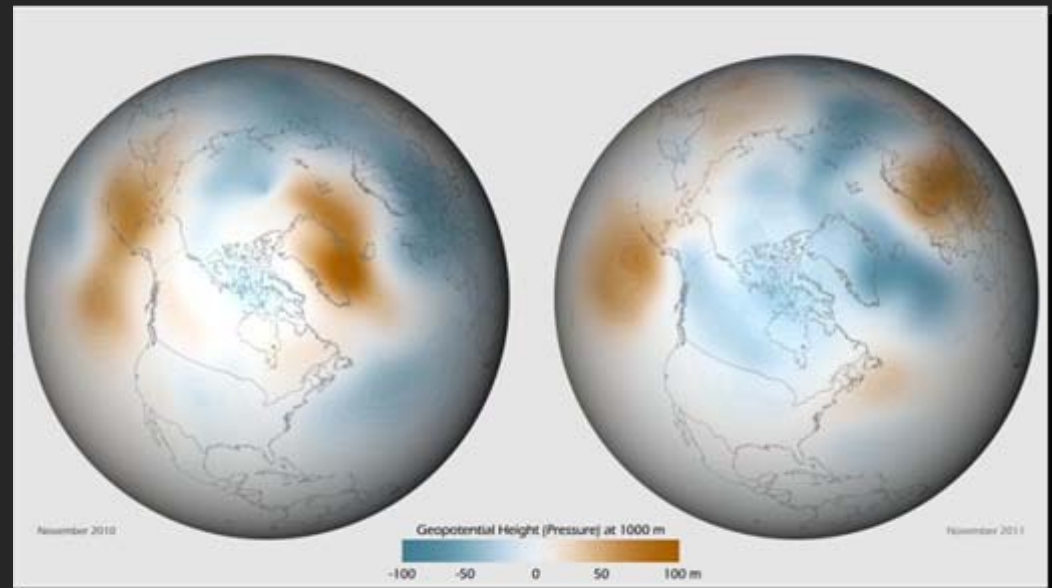
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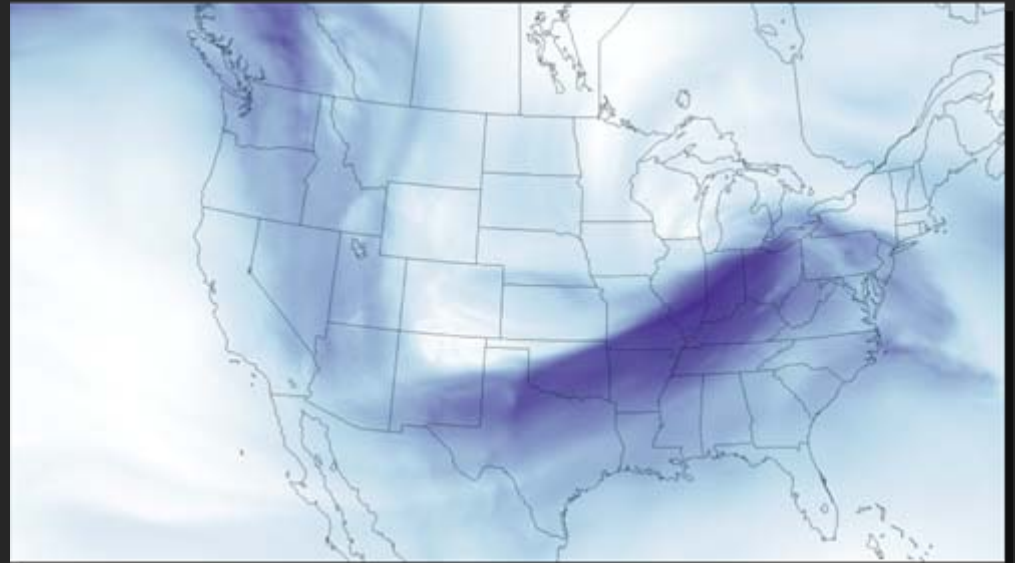
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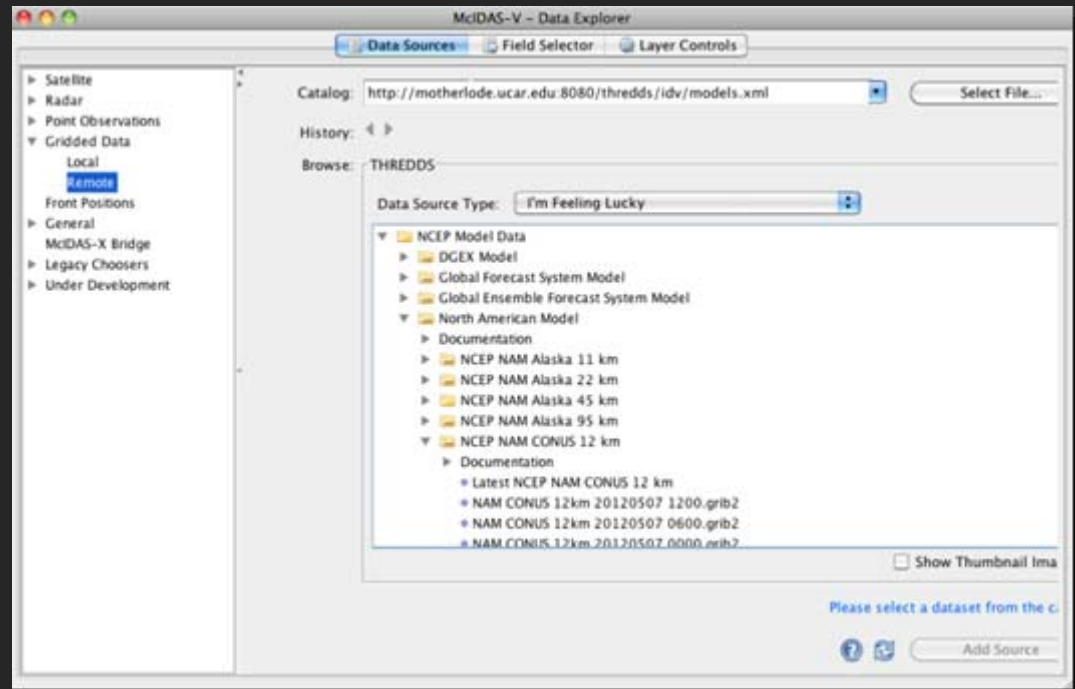
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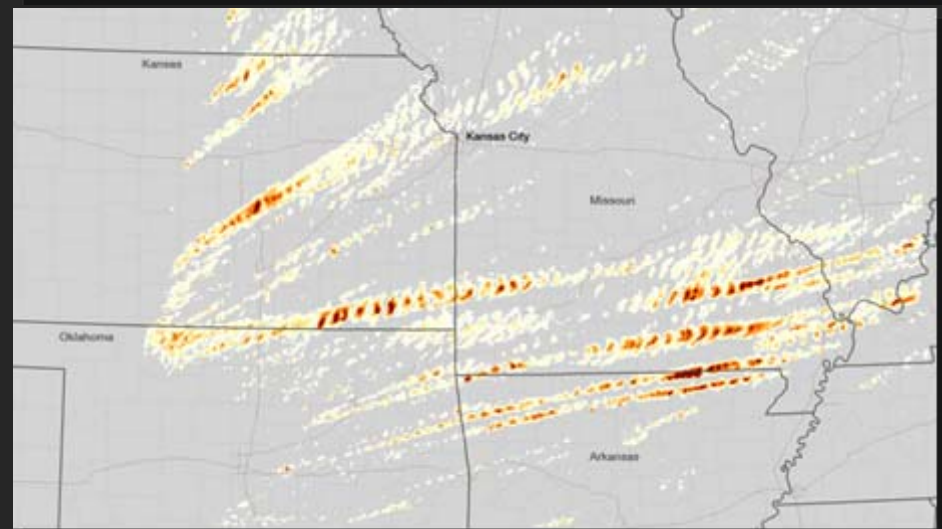
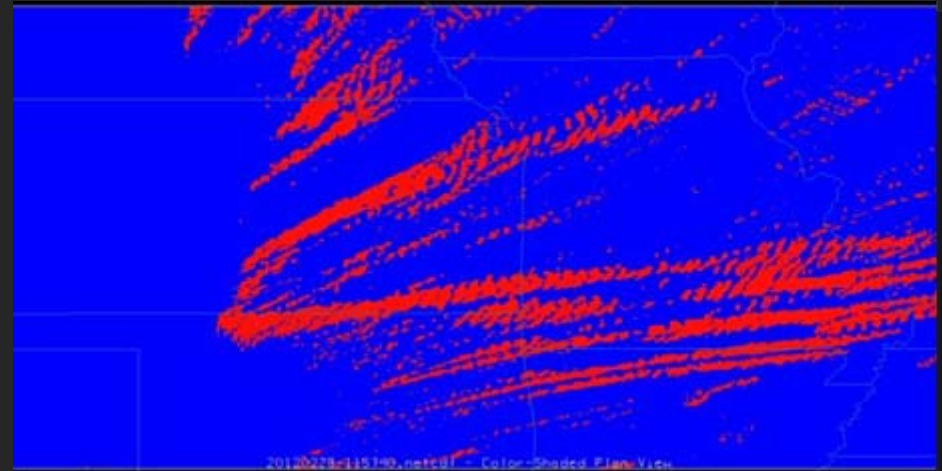
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- ? Any netCDF
- ? Custom analysis
- ? Real-time access
- ? Consolidated access
- ? Flexibility
- ? Free
- ? Time saver
- ? Resolution
- ? Batch processing



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- ❑ Any netCDF
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- ❑ Real-time access
- ❑ Consolidated access
- ❑ **Flexibility**
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- ❑ Time saver
- ❑ Resolution
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- ❑ Flexibility
- ❑ Free
- ❑ Time saver
- ❑ Resolution
- ❑ Batch processing





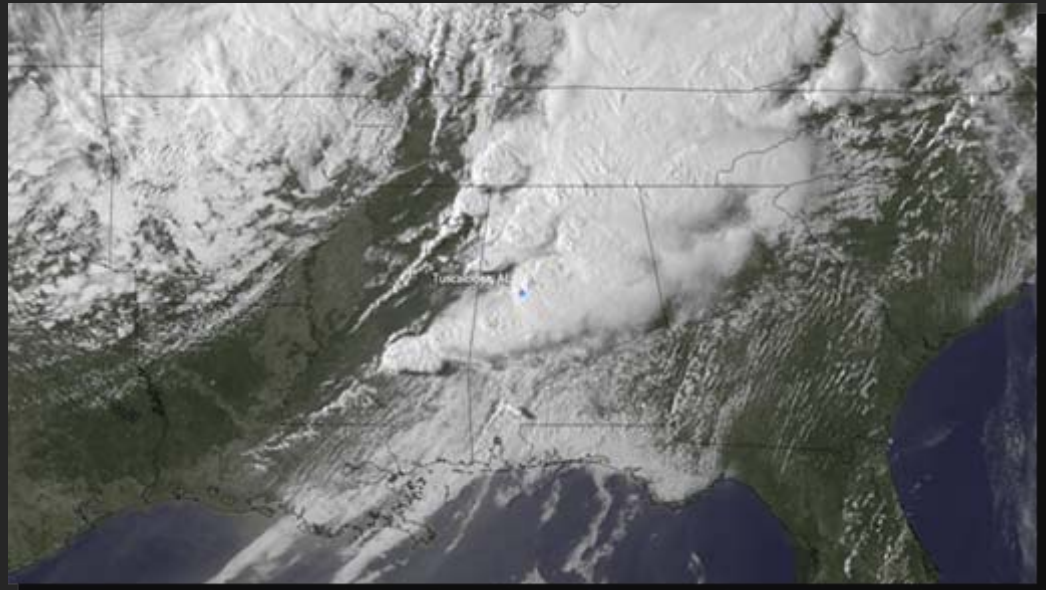
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- ❑ Flexibility
- ❑ Free
- ❑ Time saver
- ❑ Resolution: 10,000 x 10,000 pixels? Yes please!
- ❑ Batch processing



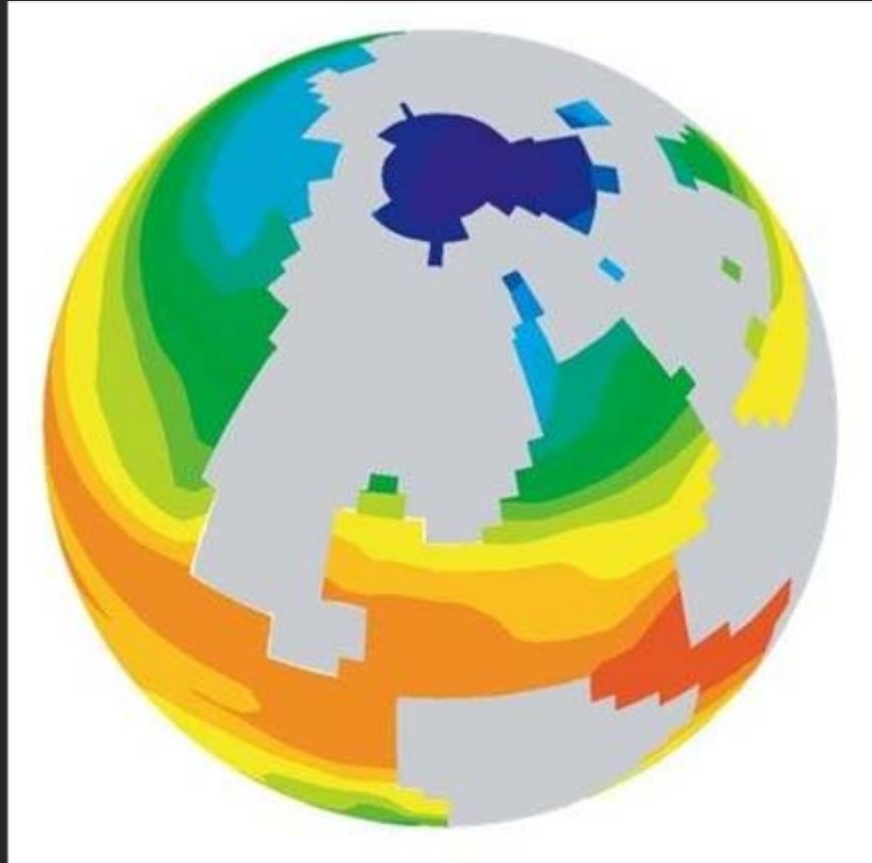
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- ❑ Batch processing



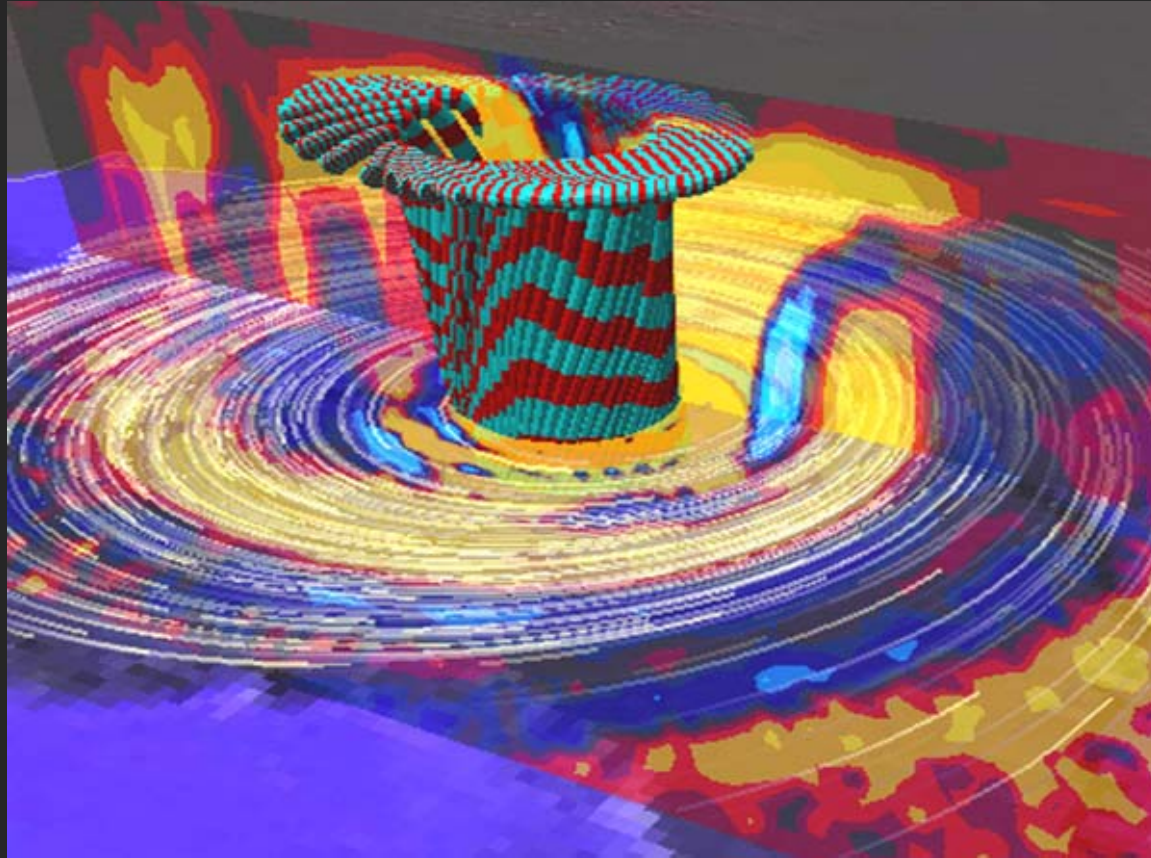
A blue-tinted globe of the Earth is centered in the image. The continents are visible in a dark blue/black color against the lighter blue oceans. Overlaid on the globe is the text "Ultra-Cool-Sexy McMAGIC" in a bold, white, sans-serif font with a thin black outline. The text is arranged in two lines: "Ultra-Cool-Sexy" on the top line and "McMAGIC" on the bottom line.

**Ultra-Cool-Sexy  
McMAGIC**



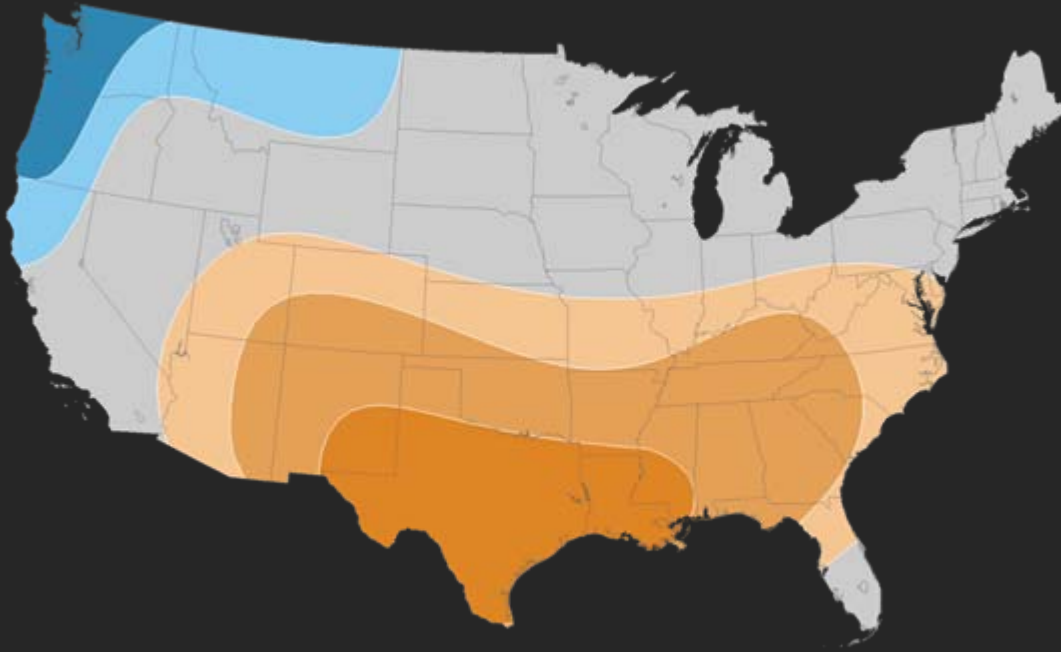
Simple

## The Evolution of Visualization



Simple  $\longrightarrow$  Complex

The Evolution of Visualization



Simple → Complex → Simple

## The Evolution of Visualization

# Rules of Color in Visualization

Hue



Saturation



Brightness





Most people don't *see* things the same way as scientists




Rogowitz, Bernice and Alan Kalvin, "The 'Which Blair Project:' A Quick Visual Method For Evaluating Color Maps," Proceedings. IEEE Visualization Conference, San Diego, CA, October 21-26, pp. 183-188, 2001




**Can you see similar patterns in grayscale and color?**

THE LITMUS TEST




The colors of the rainbow as viewed by  a person with no color vision deficiencies.




The colors of the rainbow as viewed by  a person with tritanopia.



The colors of the rainbow as viewed by  a person with protanopia.

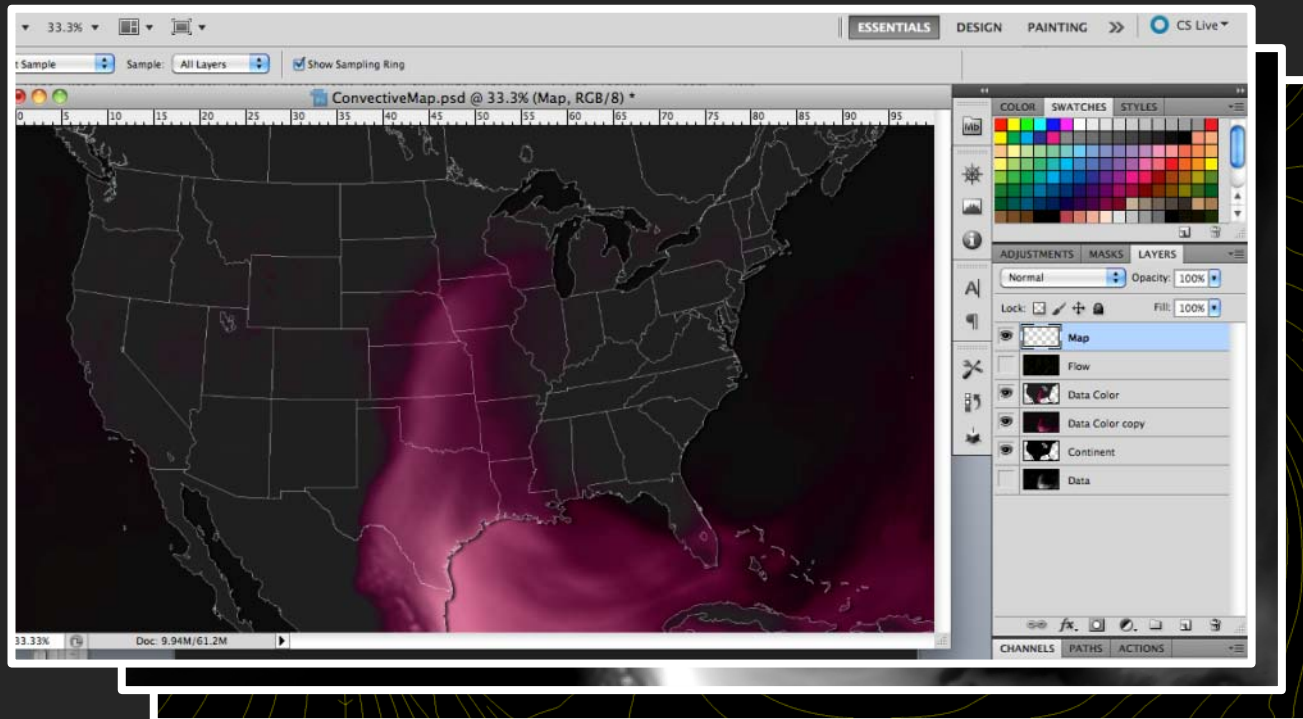


The colors of the rainbow as viewed by  a person with deuteranopia.

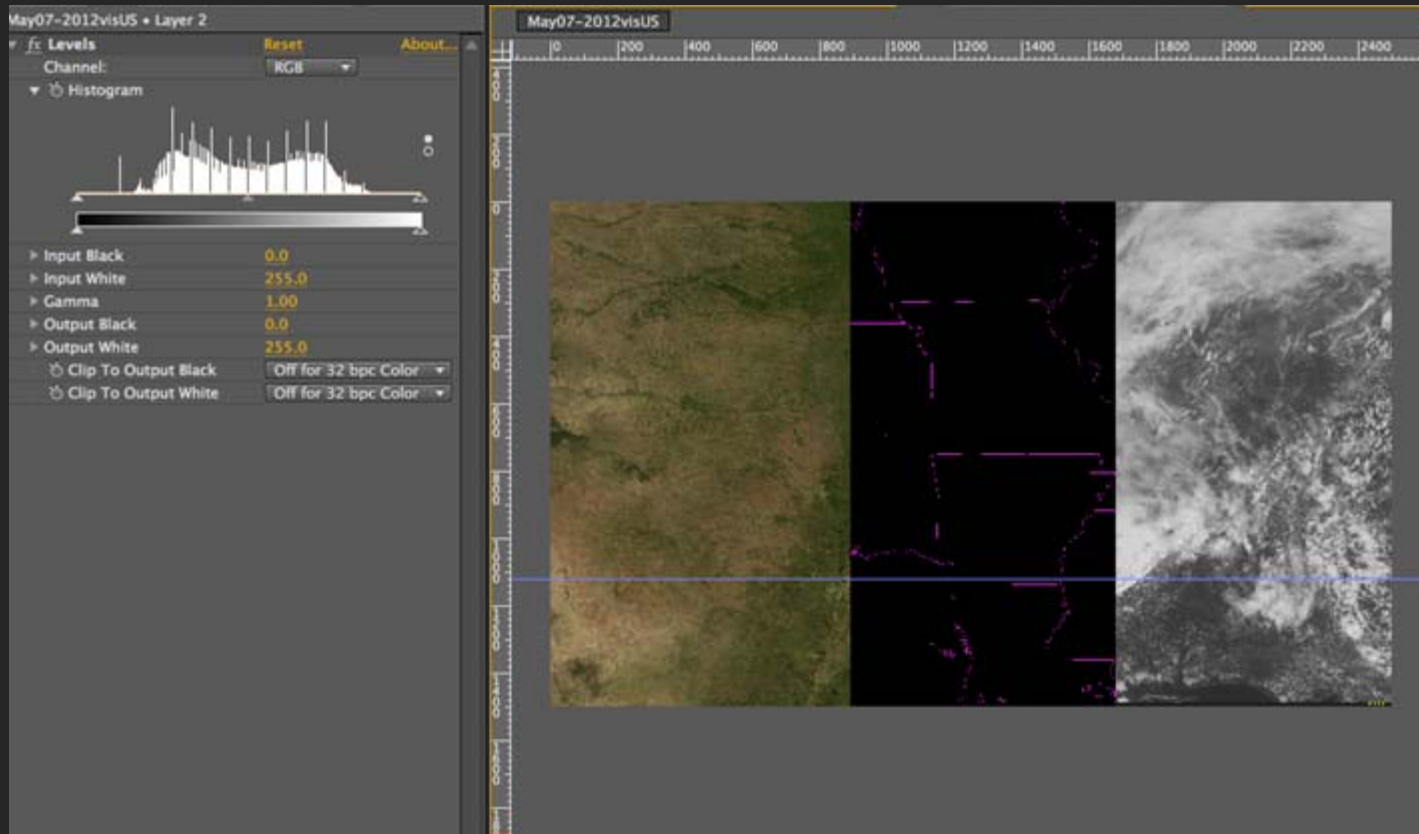


**Uses NAM CAPE product and wind barbs**

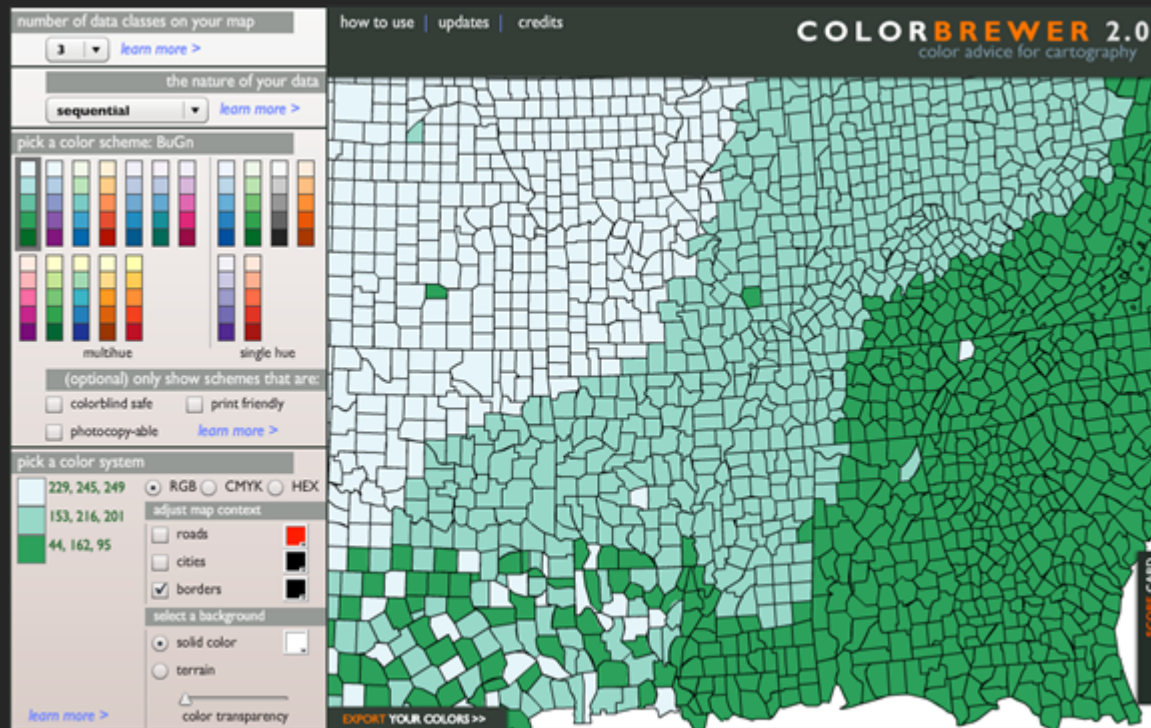
Visualizing the conditions setting up  
for major tornado outbreaks



**Output multiple map outlines data layers separately**  
Layering the displays



**Same concept, different data**  
Layering the displays



Colorbrewer2.org

Plan or test your color treatments


**NOAA** ENVIRONMENTAL VISUALIZATION LABORATORY  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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May 07, 2012

### Few 20th Century April Heat Records Remain

After a decade of warmer than average Aprils in the U.S., few highest monthly maximum temperature records for April remain from the 20th Century. This image plots the decade in which the highest average April temperature record was set for different regions of the country, starting in 1911 (i.e., 1911-1920) and running through 2010, using data from the NOAA National Climatic Center's detailed archives. The records broken in 2011 and 2012 are shown separately. Most of the pixel colors are...

April Temperature Record Age  
1911-20 20 30 40 50 60 70 80 90 2000-11-12  
Decade Year

[More...](#)

NODC , climate , heat , record , 2012.05.04

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Search Here << Drag For More

Images

Videos



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#### Real-Time Images



GOES East Satellite



GOES West Satellite



Real-Time Data

Real-time imagery, taken every 30-minutes.  
Latest Image: High Resolution  
 Last 5 Days: Web Animation  
[Broadcast Resolution](#)

#### The Big Picture



NOAA scientists describe data from their perspective.

[View the Big Picture archive](#)



## Questions?

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