

Agenda

NEO (NASA Earth Observations)

Ideas/presenter for next telecon, Monday April 11, 2pm ET

- <http://wiki.esipfed.org/index.php/Visualization>

Summer Meeting, July 12-15 Santa Fe, NM
“Data and Information Quality”

- http://wiki.esipfed.org/index.php/Summer_2011_Meeting



Providing Context and Interpretation of Global Datasets Using NEO (NASA Earth Observations)

March 14, 2011

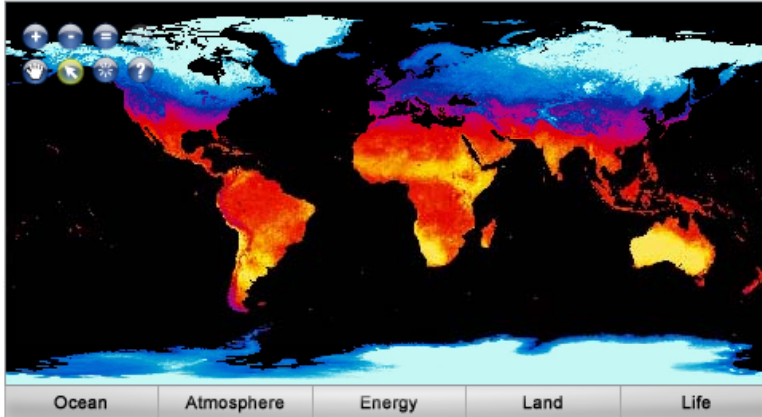
Kevin Ward
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NEO (NASA Earth Observations)

<http://neo.sci.gsfc.nasa.gov/>

- Development began 2004, launched 2005
- Repository of **global** Earth Science data **imagery**
 - 50+ datasets, daily, weekly, & monthly composites
- Serve communities who want **images** but do **not** have expertise to handle raw **data**
 - Formal & informal educators
 - Museums & Science Centers
 - Science communicators
 - Citizen scientists
- Multiple **vectors** for **access**
 - Website
 - **browse** of all imagery
 - WMS (Web Mapping Service)
 - **standards-based** access
 - FTP Global Archive
 - **bulk access** to imagery
 - **custom export** capabilities

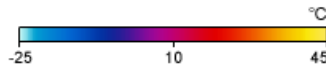
Tip: New dataset: Reflected Shortwave Radiation. See the 'Energy' tab below.



Land Surface Temperature [Day] (1 month - Terra/MODIS)

January 1, 2009 00:00-February 1, 2009 00:00

About this dataset



Search Parameters

Download Options

Full

Color

JPEG

Get Image

Analysis

Matching Datasets

Land Surface Temperature [Day] (8 day - Terra/MODIS)

Land Surface Temperature [Day] (1 day - Terra/MODIS)

Select

Search Results

January 1, 2009 00:00 to February 1, 2009 00:00

View

Open in Google Earth

Analyze this image

December 1, 2008 00:00 to January 1, 2009 00:00

November 1, 2008 00:00 to December 1, 2008 00:00

October 1, 2008 00:00 to November 1, 2008 00:00

September 1, 2008 00:00 to October 1, 2008 00:00

August 1, 2008 00:00 to September 1, 2008 00:00

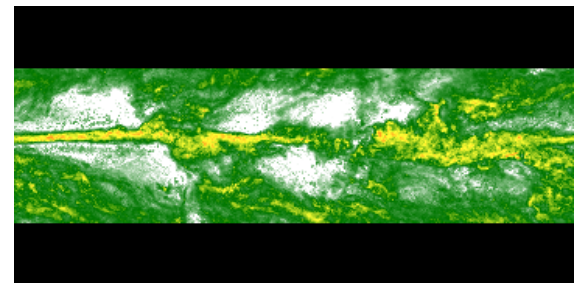
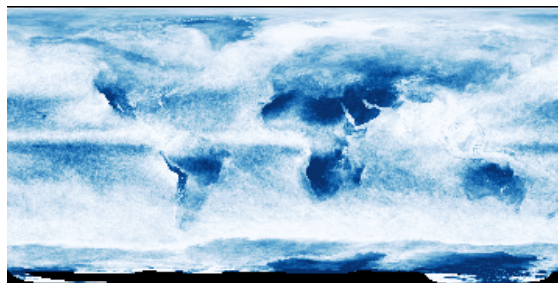
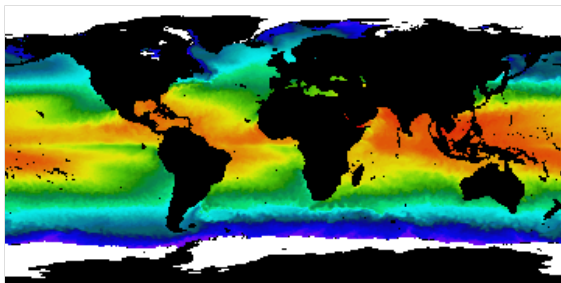
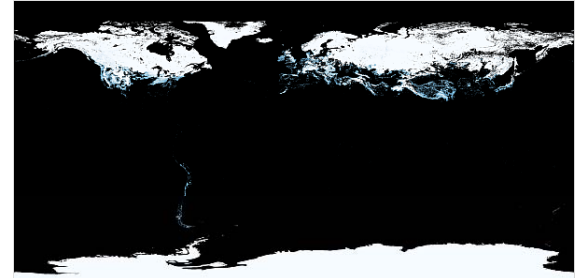
July 1, 2008 00:00 to August 1, 2008 00:00

June 1, 2008 00:00 to July 1, 2008 00:00

May 1, 2008 00:00 to June 1, 2008 00:00

What NEO provides “out of the box”

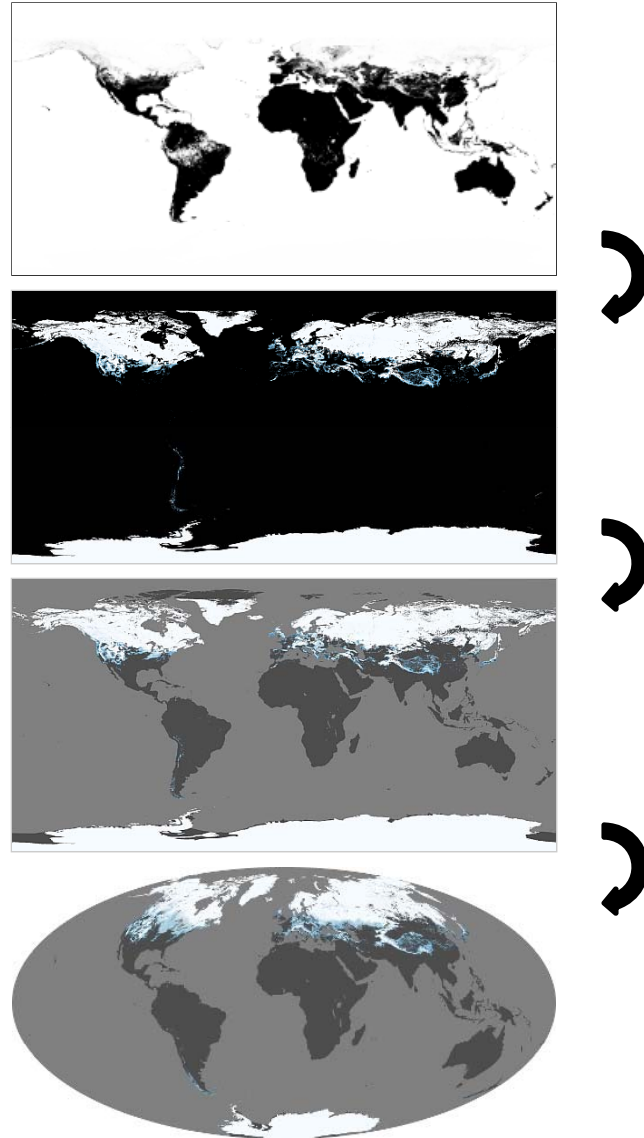
- “base” global imagery
 - data only
 - grayscale or default palette
 - JPEG, PNG, GeoTIFF
- provides maximum flexibility for users
 - apply their own palettes (grayscale)
 - combine with other products
 - output is same via WMS



Custom processing

- Develop customized exports in collaboration with target users
 - Oregon Museum of Science & Industry (OMSI)
 - Liberty Science Center (NJ)
 - NASA Goddard Visitor Center
 - Magic Planet, Science on a Sphere users
- Develop processes to generate static imagery for their distinct needs
 - promote those outputs to similar users

Custom processing



Decisions we made

Approaching datasets from visualization perspective

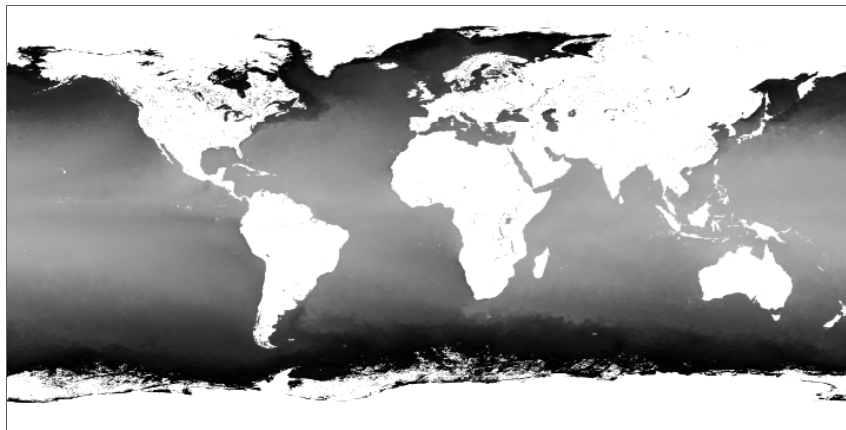
Limited processing capability (budget)

Provide maximum flexibility for end user (including ourselves)

- Default image format
- Resolution
- Temporal composition
- Data product selection

Image Format

- Don't want to store data: not a data center
 - processing intensive
- Simple to generate
 - leveraging data providers to produce imagery
- Color palette agnostic
- PGM (Portable Gray Map) – Netpbm
 - <http://netpbm.sourceforge.net/doc/pgm.html>



Resolution

- Source datasets from variety of resolutions
 - 1km to 2 deg/pixel
- Mind real-time processing and storage
 - resizing, subsetting, color palette application
- Meet needs of users
 - most need 2048x1024 or less
 - keep to a size that can be easily manipulated by users
- Decided upon 3600x1800 as max
 - or use max resolution available, if less
 - or upscale if particularly coarse (e.g., > 0.5 degrees)

Temporal Composition

- Provide ability for users to compare global composites over similar time span
 - daily, 8-day (week), monthly
 - also have 16-day and annual where appropriate
- Some production datasets not available in all composites
 - data providers provide custom composites when possible
 - most important to users are monthly, although some products are better at shorter composite

Data Product Selection

- “Accessible” datasets to users
 - core concepts
 - end user input
- Accessibility of data (and data expertise)
 - low hanging fruit
 - ~15-20 new datasets on wish list
- Some dead-ends, insurmountable problems
- Still missing a few key datasets, but hoping to make progress on those this year

Questions or comments?

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Let me know... kevin@eyeonclimate.com

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Sessions you would like to see?

Conversations you would like to have?