What’s New with Giovanni?

James G. Acker
NASA Goddard Earth Sciences
Data and Information Services Center

Quick Review

Main Elements of Giovanni

- ✓ Interactive map for region-of-interest selection
- ✓ Compendium of available data products for analysis
- ✓ Calendrical selection of time period of interest
- ✓ Menu of visualization options

Data from NASA Missions in Giovanni

MODIS (atmosphere/land), MODIS (ocean), MISR, Cloudsat, CALIPSO, AIRS, TOMS, OMI, CERES, TRMM, SeaWiFS, TES, MLS, HIRDLS, HALOE, AMSR-E, Parasol

(several of these are joint missions with other national and international space agencies)

Data from NASA Models & Composite Data Sets in Giovanni

- **GOCART**
- **MERRA**
- **GLDAS**
- **NLDAS**
- **GPCP**
- **NOBM**

Giovanni
Dedicated Data Portals

- **NEESPI**
- **MAIRS**
- **Air Quality**
- **Agriculture**
- **YOTC**

Getting Started with Giovanni

Select Area of Interest

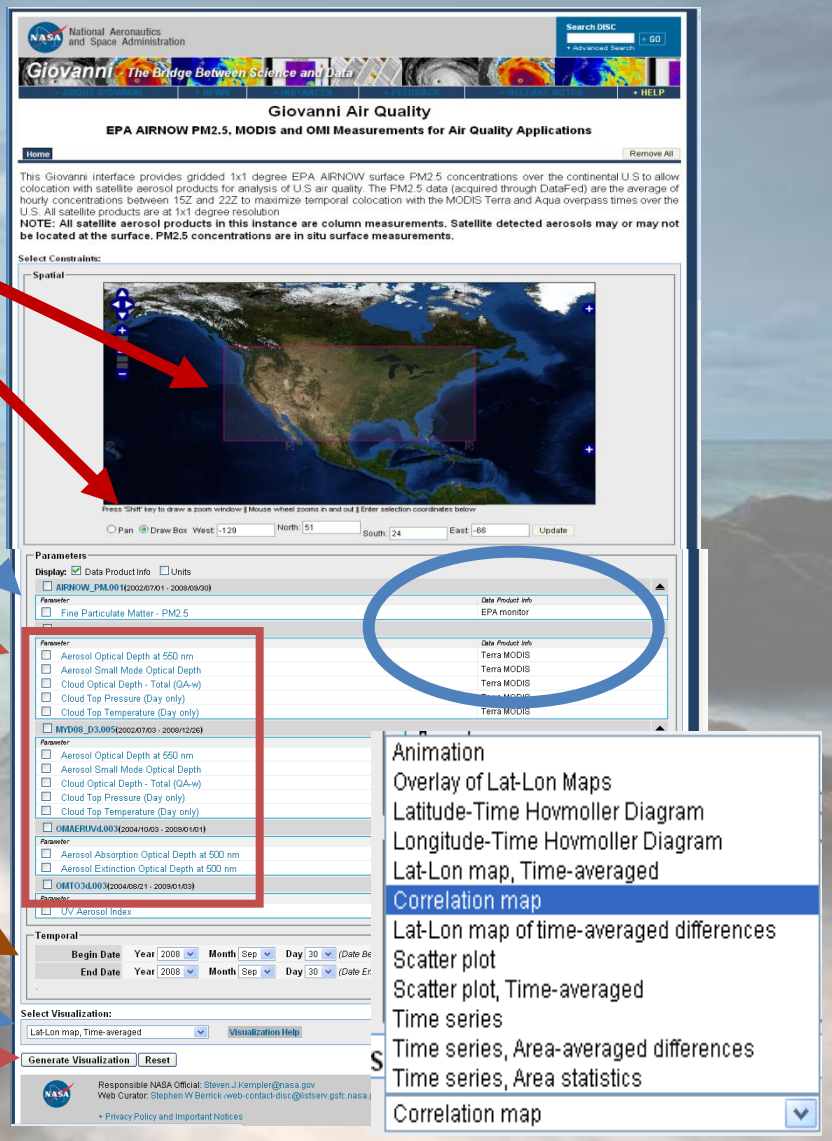
Select Display (info, unit)

Select Parameters

Select Time Period

Select Plot type

Generate Visualization



Data-enhanced Investigations for Climate Change Education (DICCE) Data Portals

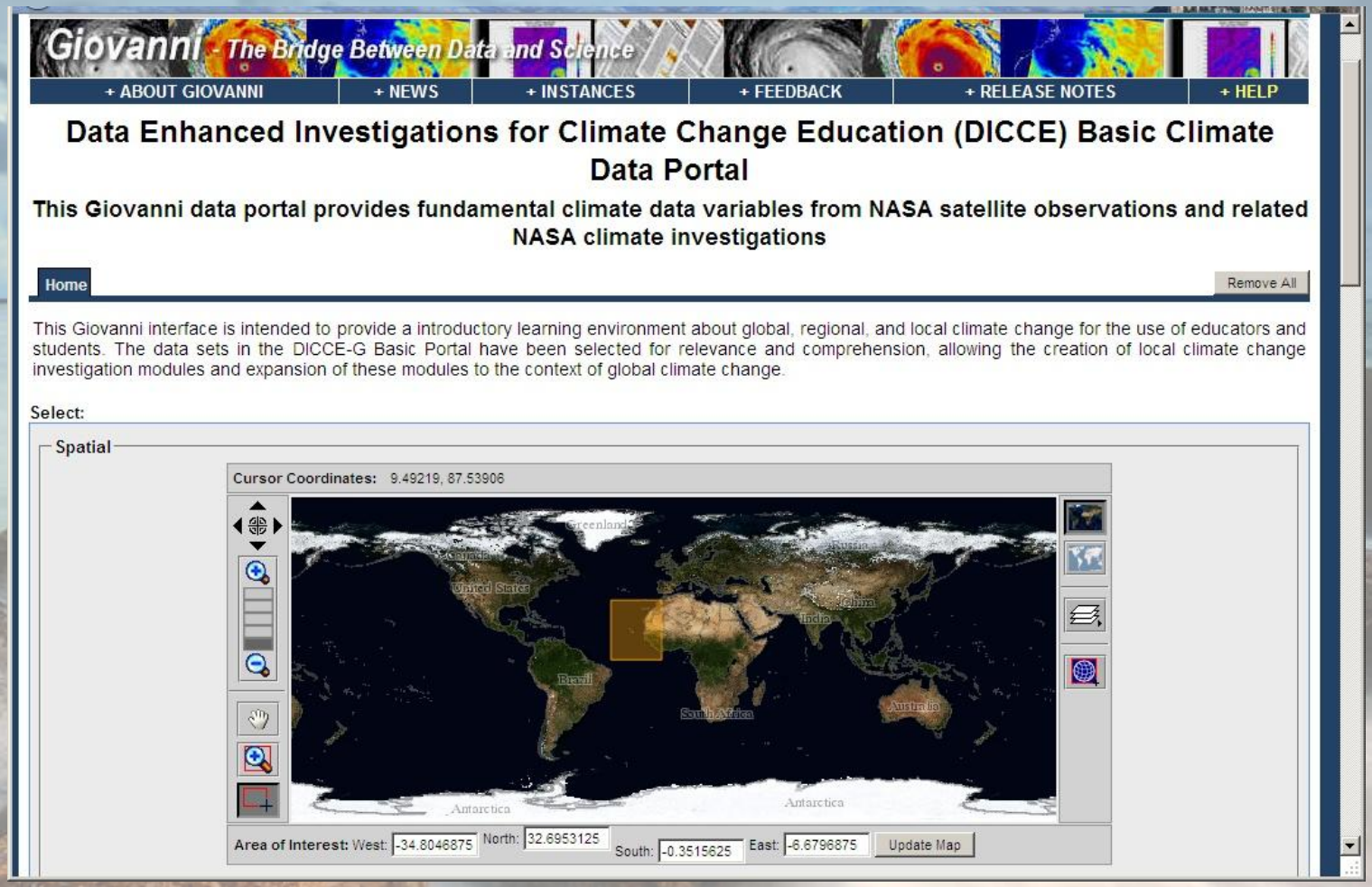
Two new portals:

- DICCE-Giovanni Basic (monthly data)
- DICCE-Giovanni Daily (daily data)

Features:

- Climate-relevant data all in one place
- Smaller, easier to comprehend list of data parameters
- Extended Help Section with expanded information
- DICCE Resource Page, with trend guides
- Instructional Videos
- Plotting Tips (in progress)

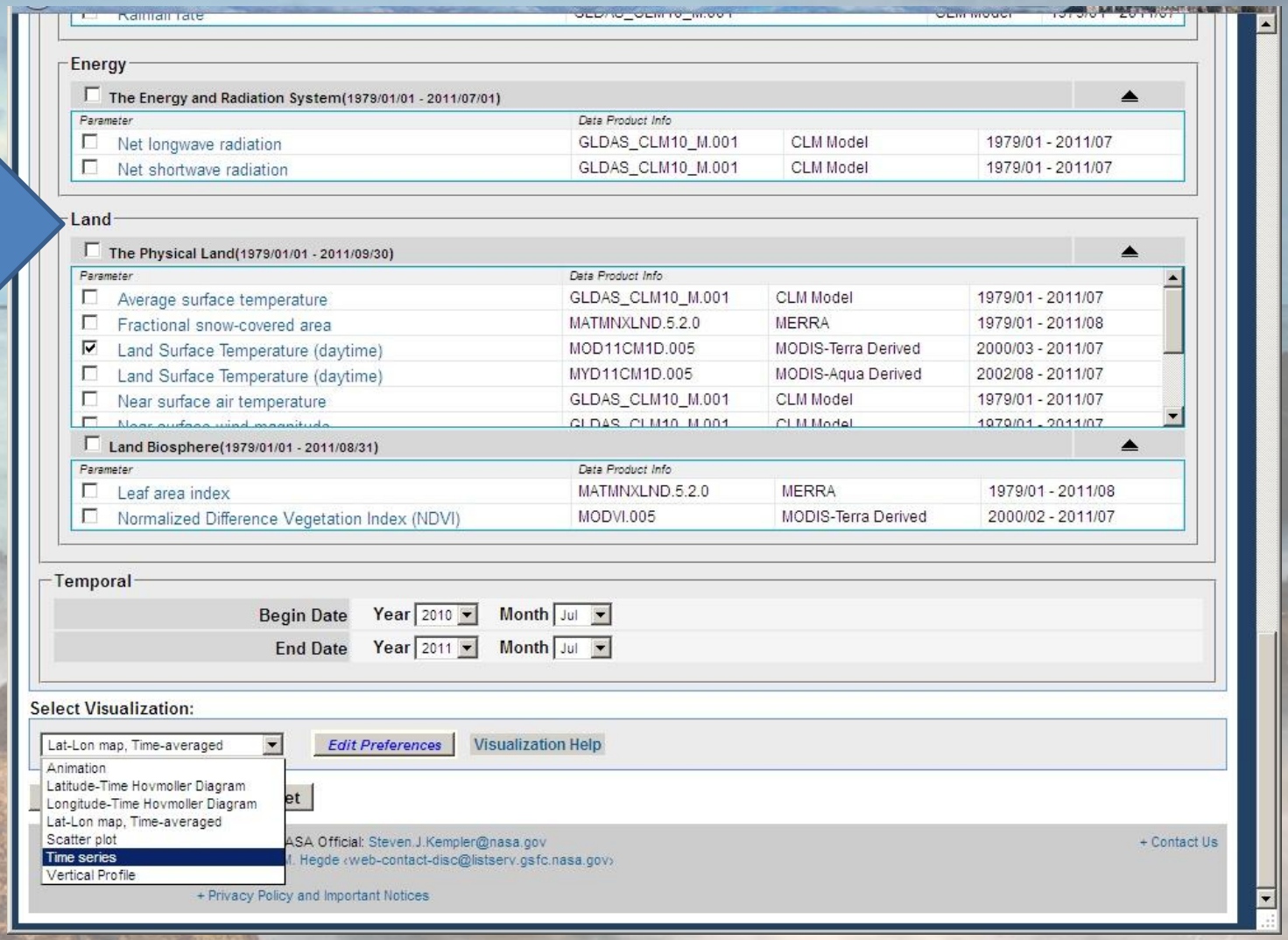
DICCE-Giovanni Basic Portal



DICCE-Giovanni Basic Portal :

Parameter Selections

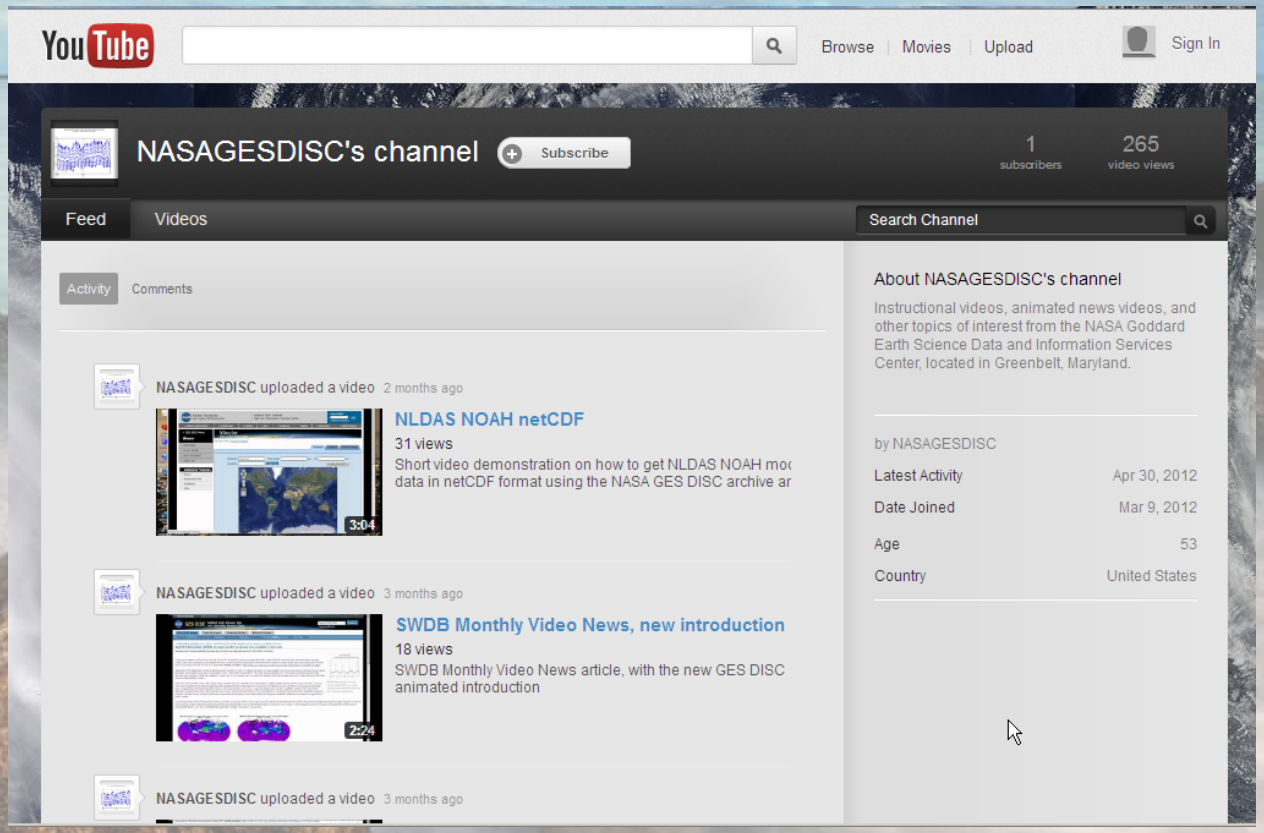
Parameters classified based on the Earth system: atmosphere, energy, land, etc.



Instructional Videos

DICCE instructional videos can be accessed from the DICCE Resource Page,
or on the NASAGESDISC YouTube channel.

More coming soon!



Trend Guides

DICCE Trend Guides explain how to interpret trends in the context of climate change, for the data parameters available in the DICCE-Giovanni portal.

DICCE Regional Trend Guide
SRI International

		Means...	Could this trend be an effect of climate warming?	Could this trend also be contributing to more climate warming in the region?	Could this trend also be contributing to less climate warming in the region?	Other reasons for the trend?
Higher values of...	**Precipitation amount in places with wet climates**	Wetter climate	Some predict that global warming will make these places even wetter because the warmer water will hence evaporate more and lead to greater amounts of moisture in the air and more precipitation. In addition, there is evidence that global warming may cause fewer but more extreme storms, so look for signs of increased month to month precipitation differences. Trends showing a shift from relatively even amounts of precipitation to wildly uneven amounts from month to month could indicate this.	Yes, because precipitation cannot occur without clouds, and clouds contain water vapor, a greenhouse gas.	Yes. Clouds block incoming solar radiation from hitting the Earth's surface, so greater cloudiness could contribute less local climate warming as well.	Scientists know that the wind-ocean oscillations known as El Nino and La Nina have major relatively predictable effects on regional weather from year to year. These oscillations are caused by wind patterns pertaining to heat transport from low (tropical) latitudes to high (arctic and antarctic) latitudes and the upwelling of ocean water from the depths to the surface. Scientists also know that there have been extreme weather events going far back in time before the modern era. Hence, because of these not-well-understood oscillations, they are reluctant to assume strong correlations between annual changes in weather and global warming. (For an overview of El Nino/LaNina, see http://www.nws.noaa.gov/om/brochures/climate/El_NinoPublic.pdf).

Plotting Tips

In progress: Text, image, and video instruction on many different methods used by experienced users to produce the best Giovanni images, data output, and analyses.

Other New Things in Giovanni !

Giovanni has also added several other items of interest to educators:

- New NLDAS Hourly data – hydrology and related parameters
- Expanded TRMM and Global Precipitation Climatology Project data
- MAIRS high resolution land surface temperature and NDVI data
- SeaWiFS Deep Blue aerosol data – entire SeaWiFS mission

- *Just added:* MODIS-Aqua 10-year ocean color climatologies, enabling anomaly analysis with many new ocean optical parameters; extended ocean model output covering more years

Any questions?