Editor’s Note:

We took a summer break from writing and sending The Giovanni News, but that doesn’t mean that development stopped on Giovanni. The Release Notes for Giovanni 4.23 can be found on page 2 of this issue, and Giovanni 4.24, with a much-anticipated new projection option, is not far behind.

Right now, it’s common for 12-15 research papers using Giovanni to appear in scientific journals each month. That pace has continued all summer. On the other side of this page is a summary of one of the summer’s recent publications.

If you happened to see the total eclipse on August 21, 2017 across America, congratulations. The viewing public was quite fortunate with the cloud cover on that day, as shown on page 3.

Finally, September is the month marking the initial selection process for the 3rd Class of the Giovanni Image Hall of Fame. But there’s still time for creativity! Read about it on page 4.

Jim Acker
The Giovanni News Editor

Research Highlight:

In their paper, the authors examine the major sources and composition of aerosols collected at the Izaña Global Atmospheric Watch (GAW) observatory on the island of Tenerife in the Canary Islands. Despite the proximity of the Canary Islands to Africa, westerly winds at this latitude cause most of the mineral aerosols collected here to have been generated over North America, with the highest levels of dust collected from February to May. Sea salt aerosols are generated over the oceans. Weather patterns over North America carry dust from the U.S. Midwest to the east and south. Only during July and August does the number of days that dust from the Sahara Desert dominates exceed the number of days that North American dust dominates.

The paper examines the chemical and physical composition of the aerosols, including dust, elemental carbon, organic carbon, sulfate, and nitrate. There are marked differences between aerosols from North America and the Sahara, allowing them to be easily distinguished. Giovanni was used to determine the months with the highest Major Dust Activity Frequency (MDAF) in North America, using the Ozone Measuring Instrument Aerosol Index. The authors also found that aerosols with a substantial contribution of emissions generated in the northeastern U.S. were most prevalent during the March to May time period.
Release Notes – Giovanni 4.23

Release Date: 2017-07-31

New Features

• **Seasonal (Interannual) Time Series with shapefile support.** With this release, users can include a shape as their selected region of interest. In addition, a combination of bounding box and shape is supported, provided that the intersection of the shape and bounding box is valid for the data type.

• **Seasonal (Interannual) Time Series with CSV download.** This release supports Comma-Separated-Variable (CSV) text download for the values shown in any interannual time-series plot.

Bug Fixes

• **Graticule layer labels** are now visible for all Interactive Maps.

• **For Interannual (Seasonal) Time Series plot and 3-D variables**, the output files now have the correct label indications for the vertical level used to make the plot.

New Data Variables

• GLDAS_NOAH025_3H (16 variables)
• GPM_3IMERG_04 (9 variables)
• GRACEDADM_CLSM0125US_7D (3 variables)
• LPRM_TMI_001 (4 variables)
• M2I1NXLFO_5_12_4 (2 variables)
• M2SDNXSLV_5_12_4 (5 variables)
• MST1NXMLD_5_2_0 (3 variables)
Both cloud fraction maps shown below are superimposed (as closely as possible) on a map of the August 21 eclipse track. The top map is Atmospheric Infrared Sounder (AIRS) daytime cloud fraction, and the bottom map is Moderate Resolution Imaging Spectroradiometer (MODIS) daytime cloud fraction. As you can see, except for Nebraska, eastern Kansas, and northern Missouri, the track largely went through areas with low cloud cover. The arrow points to where your editor observed the eclipse, near the center of the track.
The Giovanni Image Hall of Fame, 3rd Class
Now Is The Time!

If you have ever dreamed about combining your innate creativity and artistry with remote sensing data visualization, now is the time to show your talent! From now until the end of September, publications appearing over the past two years will be examined for candidates that are eligible to become members of the 3rd Class of the Giovanni Image Hall of Fame. However, it is also possible (and encouraged) to create independent visualizations using Giovanni and any type of data in the system, and submit them for consideration. Note that you can use any of Giovanni’s capabilities – so you could even make an animation. And it isn’t all about maps, as interesting time series (which can be combined with data from other sources) can be candidates as well.

Submissions will be judged on both graphical and visual quality as well as scientific significance. There have been many geophysical events of note in the past two years that lend themselves to striking visualizations – so go ahead and try utilizing the capabilities of Giovanni to portray one or more of these events. Giovanni makes it easy to generate high-quality imagery, so we’d like to see what you can create!

An example of what Giovanni can do – accumulated rainfall from Tropical Storm Cindy

Send submissions to James Acker, james.g.acker@nasa.gov.

Giovanni is a force of science - uniting observations of nature with analytical tools to enhance scientific knowledge & benefit human society