The New HDF-EOS Tools and Information Center Website

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The Hierarchical Data Format for the Earth Observing System (HDF-EOS) Tools and Information Center website was totally revamped over the past year. The site is comprised of a *Home Page*, *Examples*, *Software*, *Workshops*, *User Forum*, *References*, and a *Help Page*.

In addition to an introduction to HDF-EOS data, the *Home Page*—see **Figure 1**—includes a new feature called "Success Stories." The stories, excerpted from NASA websites, highlight recent research using data archived in an HDF format.

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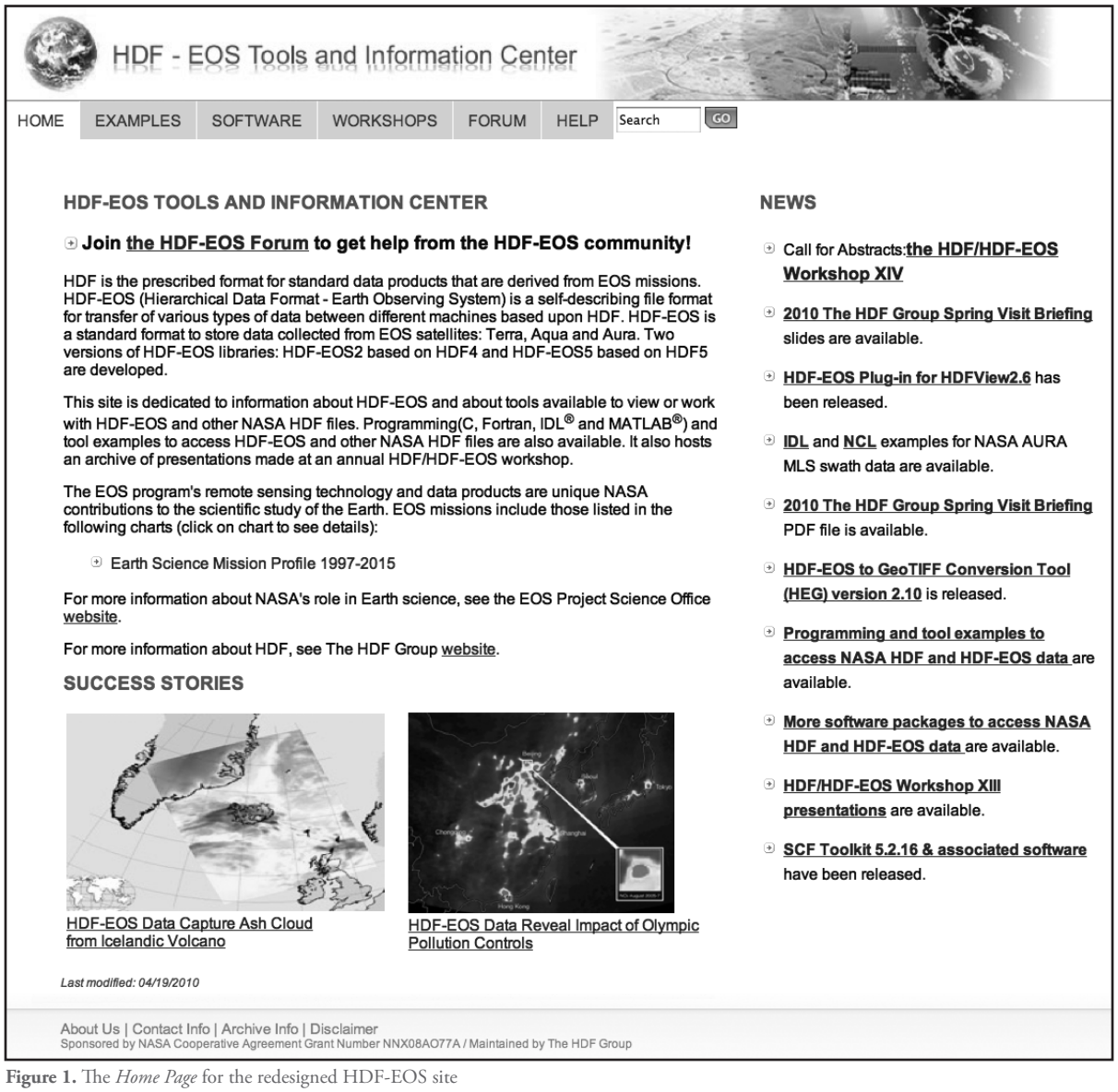

Figure 1. The *Home Page* for the redesigned HDF-EOS site

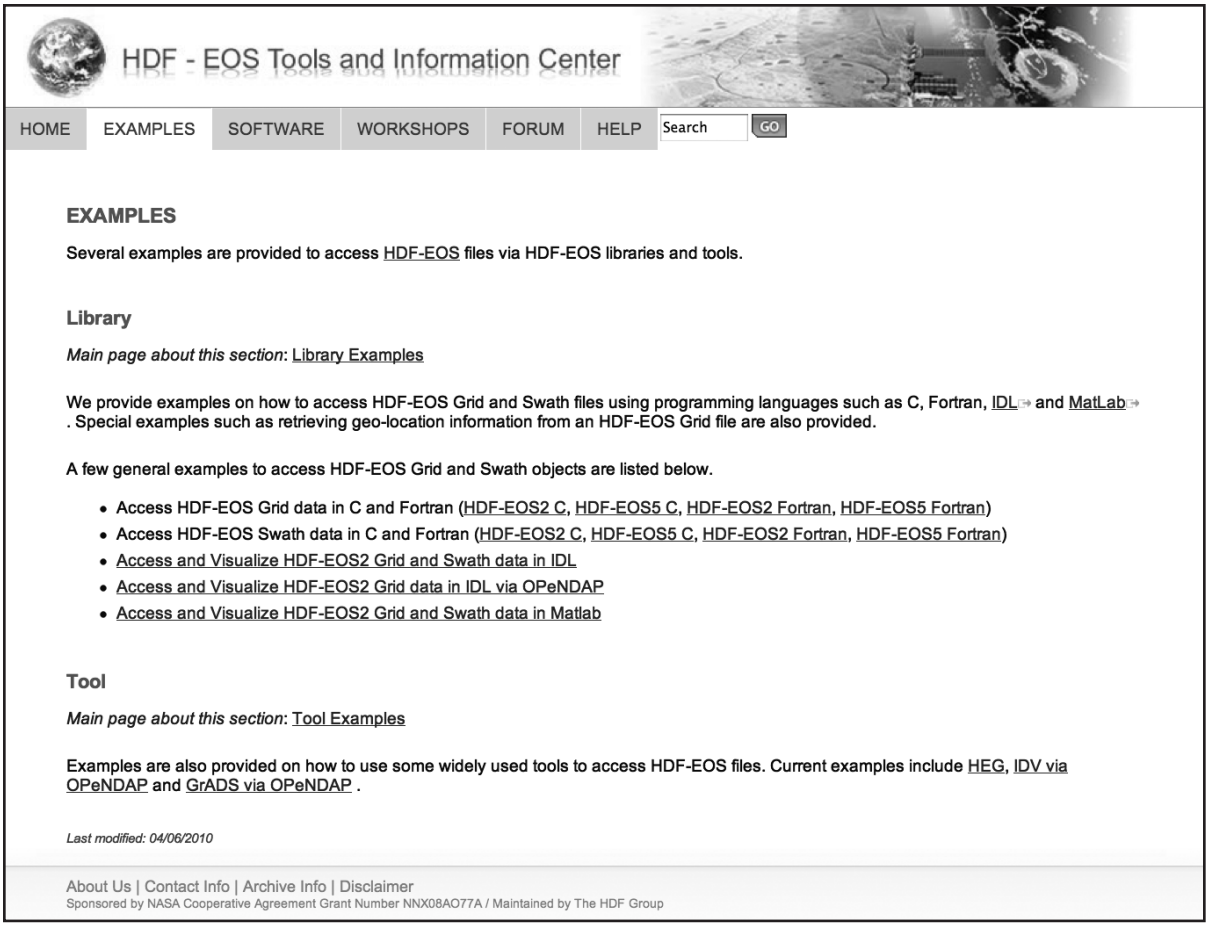

Figure 2. The new *Examples* section of the revamped HDF-EOS website

The HDF and HDF-EOS file formats are flexible; they were designed to accommodate differences required by NASA EOS data products.

A major addition to the website is the *Examples* page, which is divided into "Library" and "Tool" sections—see **Figure 2**. Examples include accessing HDF-EOS Grid and Swath files using programming languages such as C, Fortran, NCL, GrADS, IDL®, and Matlab®, and retrieving geo-location information from an HDF-EOS Grid file—see **Figure 3**. There are also NCL, IDL®, and Matlab® example codes and corresponding plots available for many NASA EOS data products including the Atmospheric Infrared Sounder (AIRS), the Moderate Resolution Imaging Spectroradiometer (MODIS), the Multiangle Imaging Spectroradiometer (MISR), the Advanced Microwave Scanning Radiometer (AMSR), Clouds and the Earth's Radiant Energy System (CERES), the Tropical Rainfall Measuring Mission (TRMM), the Sea-viewing Wide Field-of-view Sensor (SeaWIFS), the Quick Scatterometer (QuikScat), etc. (These example codes were needed because not all HDF and HDF-EOS data products can be accessed with a single method.) The HDF and HDF-EOS file formats are flexible; they were designed to accommodate differences required by NASA EOS data products.

The *Software* section also is divided into "Library" and "Tool" sections. HDF staff evaluated 35 tools and libraries, added 11 widely used tools and libraries, and provided detailed descriptions for all of them. The library section not only includes references to HDF-EOS libraries but also includes widely-used third-party packages such as the Python interface (PyHDF) and the Geospatial Data Abstraction Library (GDAL). Tools include widely used visualization and analysis tools, dumper utilities, and converters. The detailed descriptions include instructions on how to use these packages to access HDF/HDF-EOS data. Installation and limitation information are also included.

Although the HDF-EOS Tools and Information Center website provides comprehensive information regarding accessing and processing HDF/HDF-EOS data, it cannot include information on everything that users may encounter in this unique and increasingly diverse information technology environment. The HDF-EOS *User Forum* was added to provide a communication channel for HDF-EOS users. The forum includes a wealth of information including an archive of all the contents from its predecessor. Although the HDF-EOS forum does not require registration for searching the forum contents, a simple registration step is required for posting messages. Tutorials are available for both the forum registration and subscription processes. Forum members include HDF/HDF-EOS software developers, data distributors, and Earth scientists.

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The goal of the newly revamped website is to provide comprehensive and up-to-date information on HDF-EOS data as well as to promote the use of valuable NASA Earth Science data for scientific research, applications, and education. The HDF group will continue improving the new website to increase its utility. ■

Displaying the world map with the **geoshow** function also requires the longitude range starting from -180 degree and ending at 180 degree. So the longitude needs to be translated from '2.5 degree to 357.5 degree' to '-177.5 degree to 177.5 degree'. The latitude also needs to be translated from "north to south"(decreasing of the latitude) to "south to north"(increasing of the latitude) with the **geoshow** function. Accordingly, the latitude needs to be translated from '67.5 degree to -67.5 degree' to '-67.5 degree to 67.5 degree'.

Also the lower left corner in Matlab is treated as the origin of the coordinate. However, as we can see from the information obtained by **gridinfo**, the origin is defined as the upper left corner in the file. Hence, we need to flip **rrland** before passing it to the **contour** function. The code section is listed below.

Figure 8 Adjusting the data and geo-location information

```
ts = transpose(rrland);
halfx= floor(xdimsize/2);
ts_reverse = [ts(:, (halfx+1):xdimsize) ts(:, 1:halfx)];
data = flipud(ts_reverse);

lon_offset = -180;
lon_value = lon_offset + lon_value;
lat_value = fliplr(lat_value);
```

Finally, one can use the **contour** function to draw a plot using **data**, **lon** and **lat** calculated above. Since Many options are provided for using the **contour** function, users may need to refer to MATLAB's detailed document for more information about this function.

Figure 9 Visualizing a data field

```
contour(lon, lat, data)
geoshow('landareas.shp', 'FaceColor', [0.4 0.4 0.4])
```

You can see the complete code from here. Figure 10 shows the result.

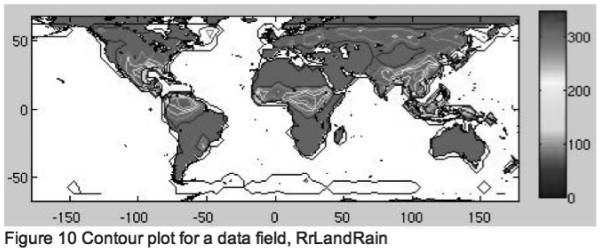

Figure 10 Contour plot for a data field, RrLandRain

Figure 3. The *Examples* section features *example* codes and corresponding plots from a number of different software packages to help with processing various kinds of EOS data. The example shown here is from Matlab®.