

LP DAAC

LAND PROCESSES DISTRIBUTED
ACTIVE ARCHIVE CENTER

News and Notes

Spring 2008

Volume 1

MODIS Reprojection Tool (MRT) 4.0 Released

The LP DAAC released an updated version of the MRT on February 13, 2008. Users can now download the new MRT 4.0 in platform-specific install packages, which includes Macintosh and Linux-64. The User Guide provides details on bug fixes and enhancements in MRT 4.0, such as improved bounding tile functionality and full Moderate Resolution Imaging SpectroradiometerV005 product support.

Users may use MRT 4.0 to reformat the Hierarchical Data Format-Earth Observation System (HDF-EOS) data format, reproject from the Sinusoidal Grid Projection (SIN), mosaic data from multiple MODIS scenes, and spatially subset MODIS scenes. The scenes below compare the same MODIS tile over Lake Michigan using MODIS/Terra Surface Reflectance data. The image on the left is in the SIN projection, and the image on the right is the same scene after the MRT was used to reproject the data. Users may register for and download the new MRT 4.0 at <http://lpdaac.usgs.gov/landdaac/tools/modis/index.asp>.

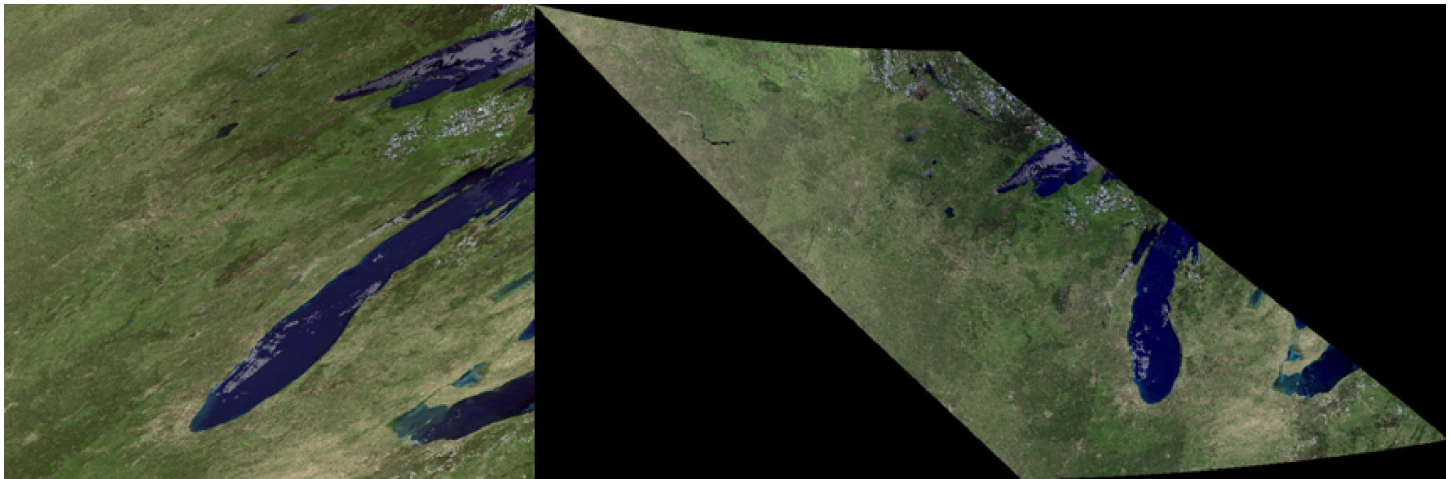


Figure 1. MODIS/Terra Surface Reflectance 8-day composite 500m data of Lake Michigan and the Great Lakes. The left image displays MODIS tile H11-V4 in the ISIN projection. The image on the right was reprojected into UTM using the MRT 4.0.

ASTER SWIR User Advisory

An ASTER Shortwave Infrared (SWIR) user advisory was issued on February 7, 2008, to notify users that some ASTER SWIR data had anomalous saturation of values of Bands 5 through 9 beginning May 2007. This problem is attributed to an increase in ASTER SWIR detector temperature, which is attributed to an increase in thermal resistance in the SWIR cryocooler. The Visible Near-Infrared (VNIR) and Thermal Infrared (TIR) bands are unaffected by this problem. The slow increase in SWIR detector temperature did not become a problem until early in 2007 and did not affect data quality until the detector temperature exceeded 83K. Figure 2 shows the trend in SWIR detector temperature for the past year.

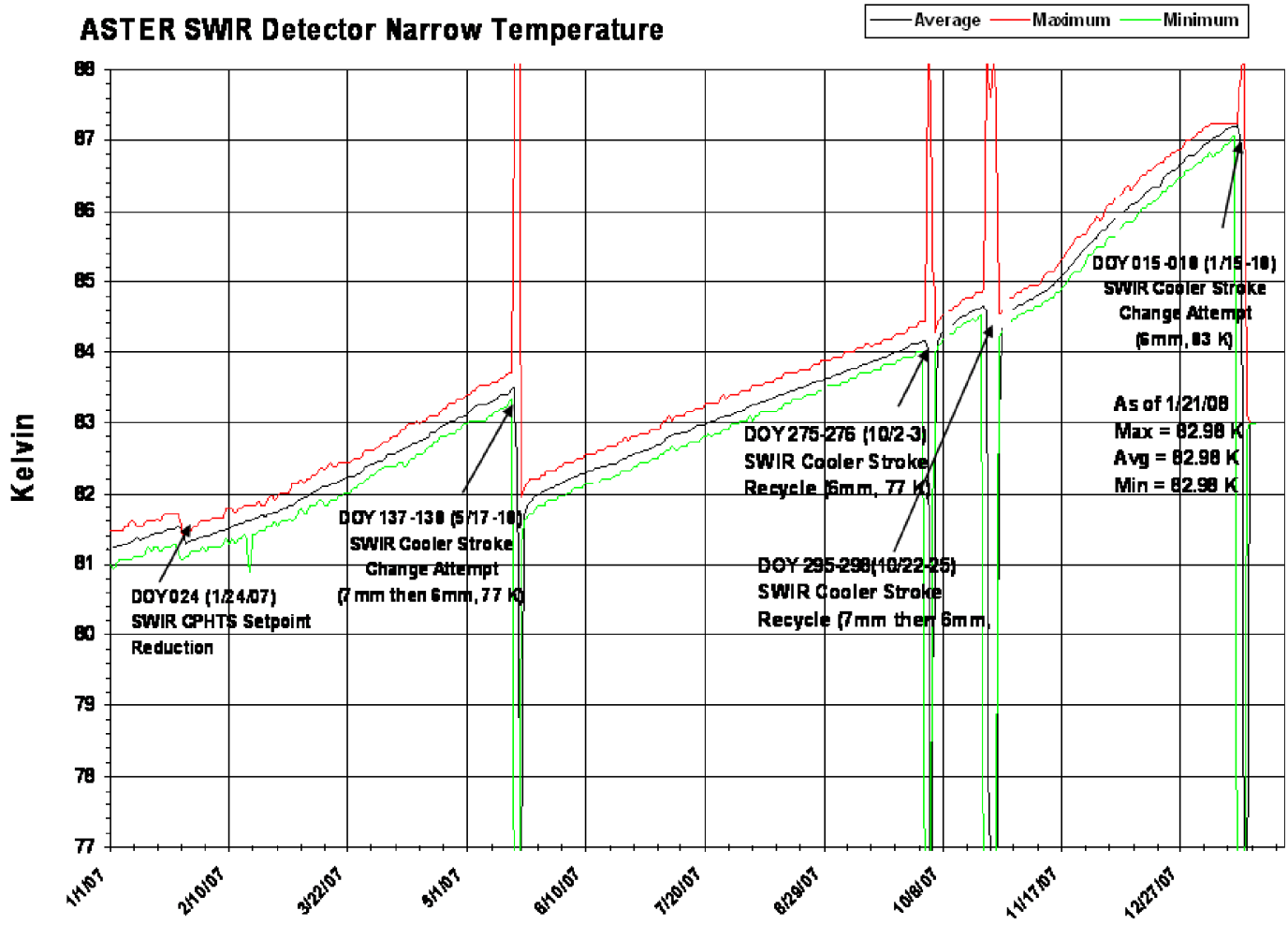


Figure 2. ASTER SWIR detector narrow temperature trend. Maximum (red), average (black), and minimum (green) lines are plotted.

Note that the detector temperature first exceeded 83K on about May 1, 2007. Following that date, four attempts were made to lower the detector temperature by recycling the cryocooler, including increasing the stroke length of the cryocooler piston. The first attempt in May succeeded in reducing the temperature to 82K, but the temperature soon began to rise again, exceeding 83K in late July. Second and third attempts to reduce the SWIR detector temperature in October also failed. However, a fourth attempt in January 2008 succeeded in reducing the SWIR detector temperature to 83K. Since then, the SWIR detector temperature has remained stable at 83K. As long as the detector temperature remains at 83K, little or no degradation of ASTER SWIR data is expected. However, users are advised that for ASTER SWIR data collected between late May 2007 and late January 2008, the SWIR detector temperature exceeded 83K, except for about six weeks in June and July. SWIR data acquired during these periods may exhibit anomalous saturation of values, particularly at high sun angles and for materials that are highly reflective in the SWIR bands. Figure 2 shows an example of SWIR saturation in an extremely bright desert scene acquired over northern Africa in August 2007 when the detector temperature was at about 83.5K. Saturation is especially prevalent in Bands 5, 6, and 7. Saturated pixels with DN = 255 are displayed in black. All other colors are unsaturated pixels.

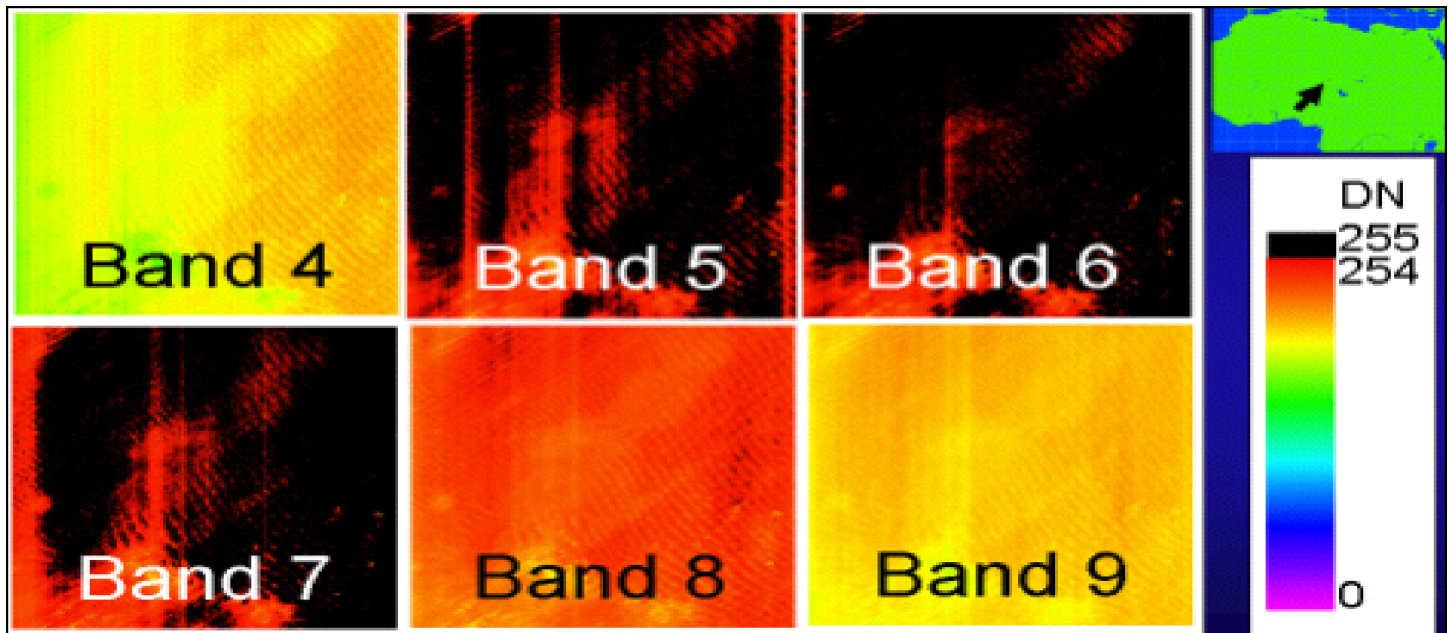


Figure 3. SWIR saturation example. August 24, 2007 Africa observation. Pixels with DN = 255 are colored black.

The LP DAAC Forms a New User Working Group (UWG)

The LP DAAC UWG is responsible for providing consultation and recommendations on a broad range of topics related to LP DAAC data holdings, systems, and services. The inaugural meeting of the UWG was held on August 22–23, 2007, at the U.S. Geological Survey Earth Resources Observation and Science (EROS) Center in Sioux Falls, SD. The meeting marked the conclusion of a several-month transition from the former Federal Advisory Committee Act (FACA)-chartered Science Advisory Panel (SAP) to an Earth Science Data and Information System (ESDIS)-chartered UWG. During the transition, the LP DAAC worked in concert with National Aeronautics and Space Administration (NASA) ESDIS, NASA Headquarters, and its previous SAP membership to draft a new charter, identify continuing membership, and recruit new members for open slots. A UWG teleconference was subsequently held on December 19, 2007, and the next face-to-face meeting is scheduled for late summer of 2008.

The LP DAAC would like to recognize the members of the UWG for their outstanding service. Current members and associated roles and affiliations are as follows:

Ex-Officio

Jeanne Behnke² (NASA ESDIS representative)
 Tom Maiersperger² (SGT contractor to USGS EROS, LP DAAC Scientist, vice-chair)
 Tom Sohre¹ (USGS, acting LP DAAC Manager)
 Woody Turner² (NASA HQ Science representative)

Science Teams

Mike Abrams² (Jet Propulsion Laboratories (JPL), ASTER Science Team representative)
 Alfredo Huete¹ (University of Arizona, MODIS Land Science Team representative)

Members at Large

Kirsten de Beurs² (Virginia Tech)

Robert Brackenridge² (Dartmouth)

Mark Carroll¹ (University of Maryland)

Kevin Gallo² (National Oceanic and Atmospheric Administration (NOAA) National Environmental Satellite, Data and Information Service (NESDIS), UWG chair)

Matt Hansen¹ (South Dakota State University)

John Mars¹ (U.S. Geological Survey (USGS))

John Melack² (University of California, Santa Barbara)

Jeff Morisette² (NASA Goddard Space Flight Center)

David Turner¹ (Oregon State University)

Susan Ustin¹ (University of California, Davis)

¹New member

²Continuing member

Notes

Faster MODIS V5 Reprocessing - The LP DAAC is supporting increased production rates to complete the MODIS version 5 reprocessing campaign more quickly. The LP DAAC has ingested and archived about three times as much data in the last five months as the five months prior. The version 5 reprocessing campaign is currently scheduled for completion in May 2008.

Data Pool Expansion - The LP DAAC online cache (Data Pool) is increasing in volume. During 2008, the LP DAAC will repopulate the Data Pool to include all MODIS version 5 data except for a 10-day rolling collection of daily Level-2G products. Providing all MODIS data online is a future goal of the LP DAAC.

ECS Evolution - The LP DAAC is in the midst of significant EOSDIS Core System (ECS) changes. A major goal of ECS Evolution is to simplify sustaining engineering and automate operations. Key enablers include code reduction and hardware refresh using commodity-based systems.

Upcoming Science Team Meetings - The 33rd ASTER Science Team Meeting will be held in Tokyo, Japan, on June 9–13, 2008. A combined MODIS/VIIRS Science Team Meeting is being planned for late May or early June in Salt Lake City, Utah.

LP DAAC User Services 2008 Conference Schedule - Look for LP DAAC User Services support at the following conference exhibits this year:

Association of American Geographers

Boston, Massachusetts

Exhibit Dates: April 15–18

American Society for Photogrammetry and Remote Sensing

Portland, Oregon

Exhibit Dates: April 29–May 2

American Association of Petroleum Geologists

San Antonio, Texas

Exhibit Dates: April 20–23

Association of State Floodplain Managers

Reno-Sparks, Nevada

Exhibit Dates: May 20–23

**Environment Systems Research
Institute, Inc.**

San Diego, California

Exhibit Dates: August 5–7

For information about any of the products or services offered by LP DAAC or to subscribe to LP DAAC News and Notes, please contact LP DAAC User Services.

LP DAAC User Services

U.S. Geological Survey
Earth Resources Observation
and Science (EROS) Center
47914 252nd Street
Sioux Falls, SD 57198

Phone: 605–594–6116

Toll Free: 866–573–3222

Fax: 605–594–6963

E-mail: LPDAAC@eos.nasa.gov

Web: <http://LPDAAC.usgs.gov>