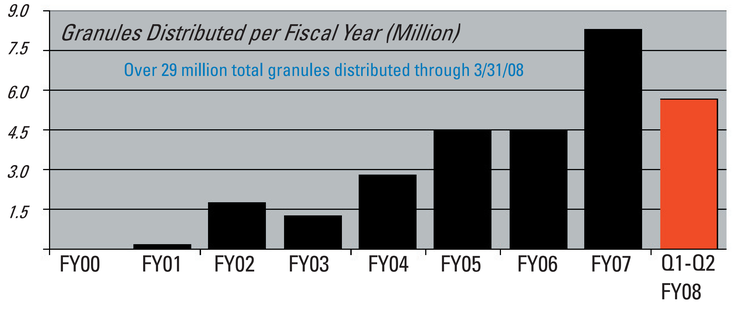
News and Notes from the Land Processes Distributed Active Archive Center (LP DAAC)

Tom Maiersperger[1], Tom Sohre[2], and Brian Sauer[2]. (1) SGT, Contractor to U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center, Sioux Falls, SD. Work performed under USGS contract 08HQCN0005. (2) USGS / EROS, Sioux Falls, SD.

LP DAAC Mission

The LP DAAC was established as part of NASA's Earth Observing System (EOS) Data and Information System (EOSDIS) initiative to process, archive, and distribute land-related data collected by EOS sensors, thereby promoting the interdisciplinary study and understanding of the integrated Earth system. The role of the LP DAAC currently includes the archiving and distribution of Moderate Resolution Imaging Spectroradiometer (MODIS) land products derived from data acquired from the Terra and Aqua satellites and higher-level processing and distribution of Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) data from the Terra platform.

Historic Trend in User Demand



Top Ten LP DAAC Products Distributed (First Half of FY08)

1. TERRA MODIS MOD13A2 - Vegetation Indices 1km 16-day Tile
2. TERRA MODIS MOD11A2 - Land Surface Temperature / Emissivity 1km 8-day Tile
3. TERRA MODIS MOD15A2 - LAI / FPAR 1km 8-day Tile
4. TERRA MODIS MOD09A1 - Surface Reflectance Bands 1-7 500m 8-day Tile
5. TERRA MODIS MOD14 - Thermal Anomalies / Fire 1km Swath
6. TERRA MODIS MOD11A1 - Land Surface Temperature / Emissivity 1km Daily Tile
7. TERRA ASTER AST_L1A - Reconstructed Unprocessed Instrument Data 15/30/90m Scene
8. TERRA MODIS MOD13Q1 - Vegetation Indices 250m 16-day Tile
9. AQUA MODIS MYD14 - Thermal Anomalies / Fire 1km Swath
10. TERRA MODIS MOD14A1 - Thermal Anomalies / Fire 1km Daily Tile

Upcoming Outreach Events

NASA Carbon Cycle and Ecosystems Joint Science Workshop, Adelphi MD, April 28 – May 2, 2008.

American Society for Photogrammetry and Remote Sensing, Portland OR, April 28 – May 2, 2008.

Association of State Floodplain Managers Annual Meeting, Reno NV, May 18 – 23, 2008.

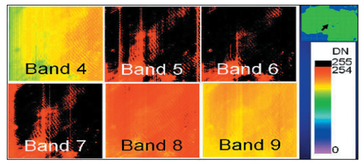
IEEE International Geoscience & Remote Sensing Symposium, Boston MA, July 6 – 11, 2008.

93rd Ecological Society of America Annual Meeting, Milwaukee WI, August 3 – 8, 2008.

ESRI International User Conference, San Diego CA, August 4 – 8, 2008.

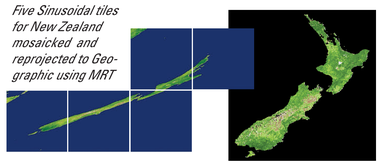
News

ASTER SWIR Temperature Rise



Anomalous saturation of values has been observed in ASTER Bands 5 through 9 since May 2007. This problem is attributed to an increase in ASTER SWIR detector temperature believed to be caused by increased thermal resistance in the SWIR cryo-cooler. VNIR and TIR bands are unaffected by this problem. Please refer to http://lpdaac.usgs.gov/news/aster_user_advisory.asp for more details.

MODIS Reprojection Tool 4.0 Released

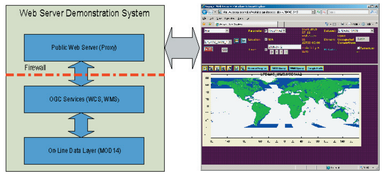


The LP DAAC released version 4.0 of the MODIS Reprojection Tool (MRT) on February 13, 2008. Improvements over prior versions include Mac and 64-bit platform support, MODIS collection 5 support, and fixes for bounding tile and half-pixel offset problems. Visit http://lpdaac.usgs.gov/landdaac/tools/modis/index.asp for further details and to download the tool.

User Working Group Meets

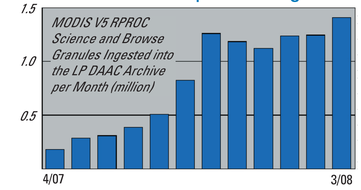
A new LP DAAC User Working Group (UWG) was chartered in 2007 and convened its annual meeting on August 22–23, 2007 at EROS. The UWG is composed of ASTER and MODIS Science Team representatives and at-large science users. The UWG is responsible for providing guidance and recommendations on a broad range of topics related to LP DAAC data holdings, systems, and services.

OGC Technologies Investigated



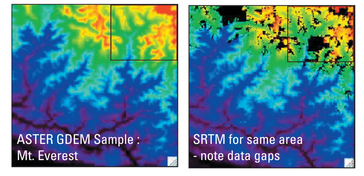
A prototype activity tested Open Geospatial Consortium (OGC) Web Mapping Service (WMS) and Web Coverage Service (WCS) for MODIS fire products. Key stakeholders included DataFed at Washington University (OGC application), NASA GIO ($), and EPA (users). WMS is a viable protocol for browsing EOS products. WCS has been proven as an alternative for delivery of EOS MODIS data.

Faster MODIS V5 Reprocessing



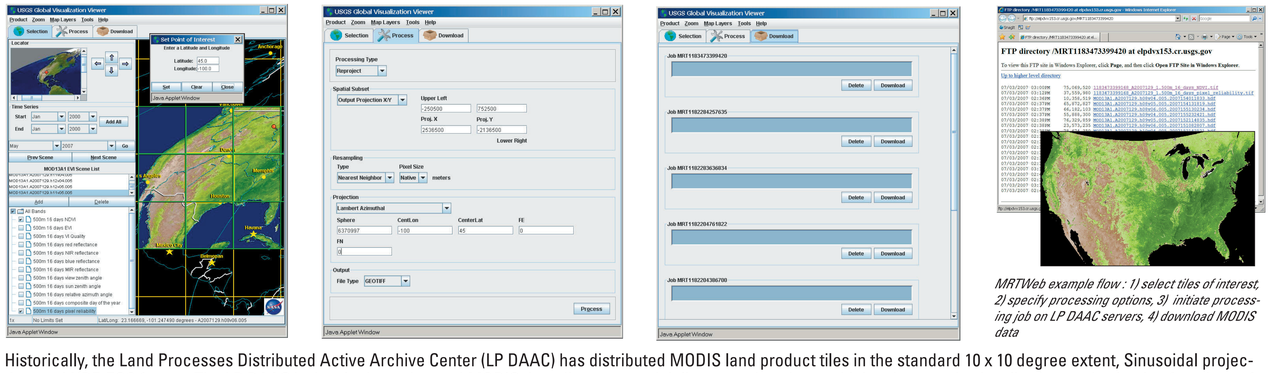
The LP DAAC is supporting increased production rates to complete the MODIS version 5 reprocessing campaign faster. The LP DAAC has ingested and archived about 3 times as much reprocessed data in the last 6 months as the 6 months prior. The version 5 reprocessing campaign is currently scheduled for completion in May 2008.

ASTER Global DEM in Production



An ASTER Global Digital Elevation Model (GDEM) is in production. The work is being done by a Japanese commercial company in partnership with NASA and the ASTER Science Team. About 23,500 1x1 degree tiles will be produced at 30-meter resolution with a vertical accuracy of about 10 meters. The GDEM is scheduled for completion in 2009.

Coming Soon - MODIS Reprojection Tool on the Web (MRTWeb)



MRTWeb example flow : 1) select tiles of interest, 2) specify processing options, 3) initiate processing job on LP DAAC servers, 4) download MODIS data

Historically, the Land Processes Distributed Active Archive Center (LP DAAC) has distributed MODIS land product tiles in the standard 10 x 10 degree extent, Sinusoidal projection, and HDF-EOS format. The LP DAAC is developing enhanced MODIS data discovery and delivery services by combining the search, visualization, and selection functions of the Global Visualization Viewer (GloVis) with the mosaicking, spatial subsetting, band subsetting, reprojection, resampling, and reformatting functions of the MODIS Reprojection Tool (MRT). MRTWeb is currently in Beta testing, with public release pending the close of the development effort and completion of the MODIS data pool repopulation effort.

Notes

Customer Satisfaction Up - Results of the 2007 EOSDIS Customer Satisfaction Survey showed a 4% overall increase over 2006 for the LP DAAC. Improvement priorities include product search, selection, order, and documentation.

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 enginneering and automate operations. Key enablers include code reduction and hardware refresh using commodity-based systems.

NASA Proposal Funded - Two LP DAAC investigators were recently funded on a 5-year NASA grant entitled "Vegetation Phenology and Enhanced Vegetation Index Products from Multiple Long Term Satellite Data Records."

Upcoming Science Team Meetings - The first combined MODIS/VIIRS Science Team Meeting will be held in Baltimore, Maryland, from May 13–16, 2008. The 33rd ASTER Science Team Meeting will be held in Tokyo, Japan, from June 9 –13, 2008.

http://lpdaac.usgs.gov/news_register.asp