

Landsat Update

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Note: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Landsat Mission News

Successful Launch of the Landsat Data Continuity Mission!

The Landsat Data Continuity Mission (LDCM) launched from Vandenberg Air Force Base in California at 10:02 a.m. PST on February 11, 2013 atop an Atlas V-401 rocket.



LDCM is the future of Landsat satellites. It will continue to obtain valuable data and imagery to be used in agriculture, education, business, science, and government. The Landsat Program provides repetitive acquisition of moderate resolution multispectral data of the Earth's surface on a global basis. The data from the Landsat spacecraft constitute the longest record of the Earth's continental surfaces as seen from space. It is a record unmatched in quality, detail, coverage, and value. NASA will use the first 100 days on-orbit to verify that all systems, subsystems, components, and instruments are functioning correctly. Once this check-out period is completed, USGS will take on

operational responsibility for the mission, renaming it Landsat 8. A video of the launch can be watched at http://www.youtube.com/watch?feature=player_embedded&v=2pnqFHxOa1c .

Landsat 5 Sets Guinness World Record

Landsat 5 entered the Guinness World Records as the "Longest-operating Earth observation satellite," as stated in an e-mail from Guinness World Records sent to NASA Goddard Space Flight Center in Greenbelt, Maryland. Outliving its three-year design life, Landsat 5 delivered high-quality, global data of Earth's land surface for 28 years and 10 months.

More details about this outstanding achievement can be found at http://www.nasa.gov/mission_pages/landsat/news/landsat5-guinness.html.

Landsat Product Information

LDCM/Landsat 8 File Naming Convention

Operational data from Landsat 8 will be available after the Mission Transition from NASA to USGS, which is currently planned for late May. Check out <http://landsat.usgs.gov> for updates. LDCM product information can be found at: http://landsat.usgs.gov/LDCM_DataProduct.php.

For the first time, the thermal instrument (the Thermal Infrared System or TIRS) has been named specifically separate from the multispectral instrument (the Operational Land Imager or OLI). However, the data from both instruments will be processed and bundled to the same product specifications as previous missions. When a user downloads a scene, both OLI and TIRS bands will be included, and there will be no particular differentiation when it comes to file naming and so forth.

However, upon the rare occasion that there may be a TIRS image without an OLI image or vice versa, those data will be made available to the user community, with a slight different naming convention (see below).

LDCM (to be renamed Landsat 8) file naming convention:

Includes both OLI and TIRS: LC80390222013076EDC00
Includes only OLI: LO80390222013076EDC00
Includes only TIRS: LT80390222013076EDC00

L: Landsat
C/O/T: Instrument; C=Combined, O=OLI, T=TIRS
8: Satellite
039: Path (WRS-2)
022: Row (WRS-2)
2000: Year
076: Julian Day (Day 76 of the calendar year = 17 March)
EDC: Ground Station where the data was received
00: Archive version number

Product News

Landsat 7 Lifetime Calibration Update

Analysis of large, stable desert sites in the Sahara Desert has shown that the gains of the ETM+ instrument are degrading in a consistent, but currently predictable, manner. The degradation has been slow, with a maximum of -0.21 percent annually in bands 1 and 7 and is statistically significant in all bands. Although relatively slow, over the 14 years of operation this accounts for calibration errors of up to 2.8 percent.

Therefore, on April 1, 2013, all Landsat 7 data on the online server will be purged to allow an update which will correct images for this degradation. Newly acquired data will be automatically processed, and users will need to request historical data for processing.

For more information, please visit: http://landsat.usgs.gov/science_L7_Cal_Notices.php.

We would like to hear from you! *What calibration impacts are significant enough that would cause you to reorder data? Do you keep archives of data for reuse, or do you reorder data on an as needed basis? Would a purging of the online cache of L1T products negatively impact your work? Please contact us at landsat@usgs.gov with your comments!*

Top of Atmosphere Reflectance

In early summer 2013, Landsat data products from Landsat 1 through Landsat 7 will have Top of Atmosphere reflectance (TOA) applied. At this time, all products affected will be deleted from the online cache and reprocessing will begin.

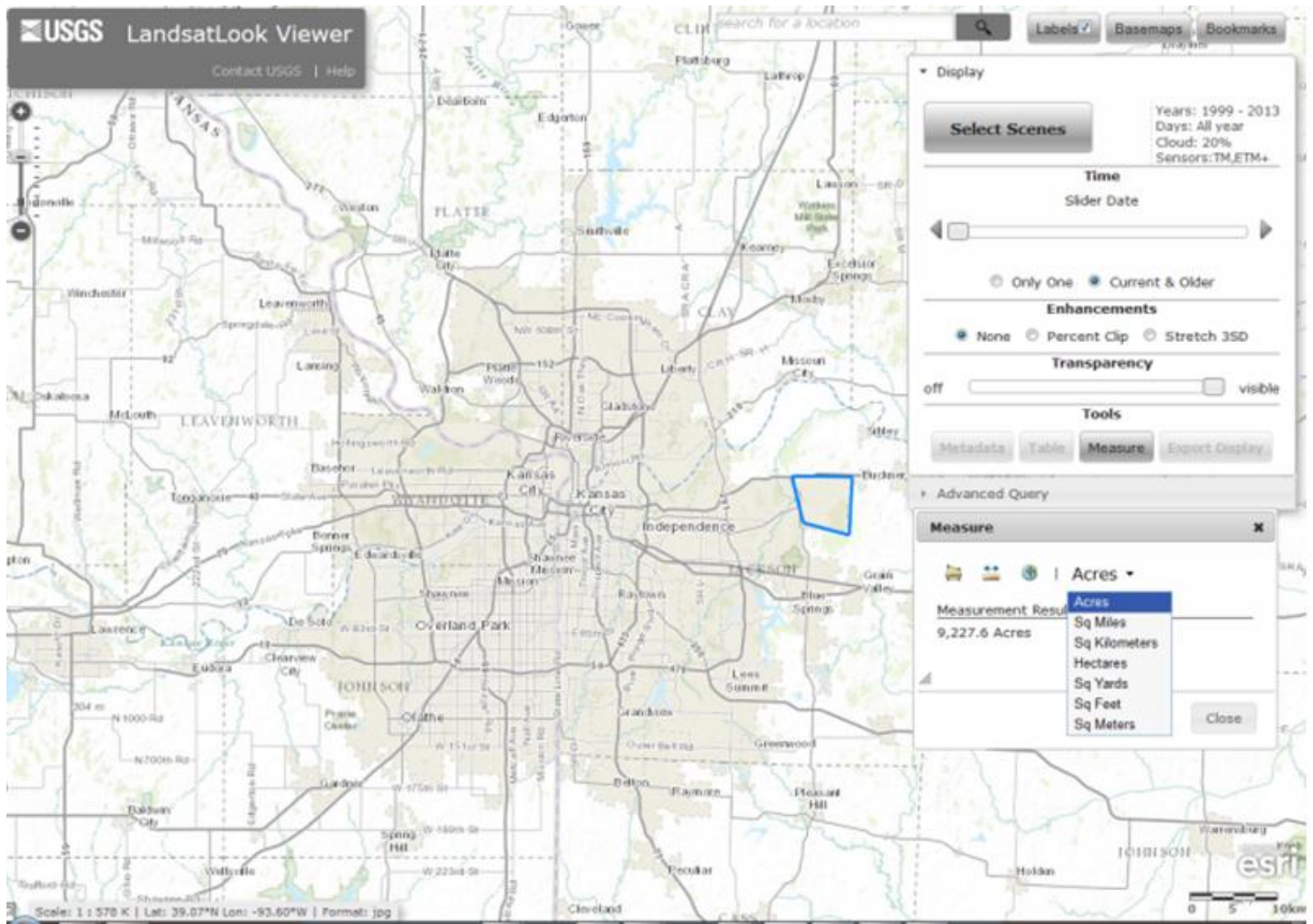
The LDCM data products will have TOA applied when that data becomes available around late May.

Tips and Tricks

Using the New Measure Tool in the LandsatLook Viewer

The USGS LandsatLook Viewer (<http://landsatlook.usgs.gov>) now has the capability to measure distance, square distance, and display the latitude/longitude for points of interest. This is useful to measure city limit areas, shadows, and other interesting points on the imagery.

This tool can be used on the base map before loading Landsat images, or after you select them. The transparency slider can be used to see areas measured before you add the image layer.

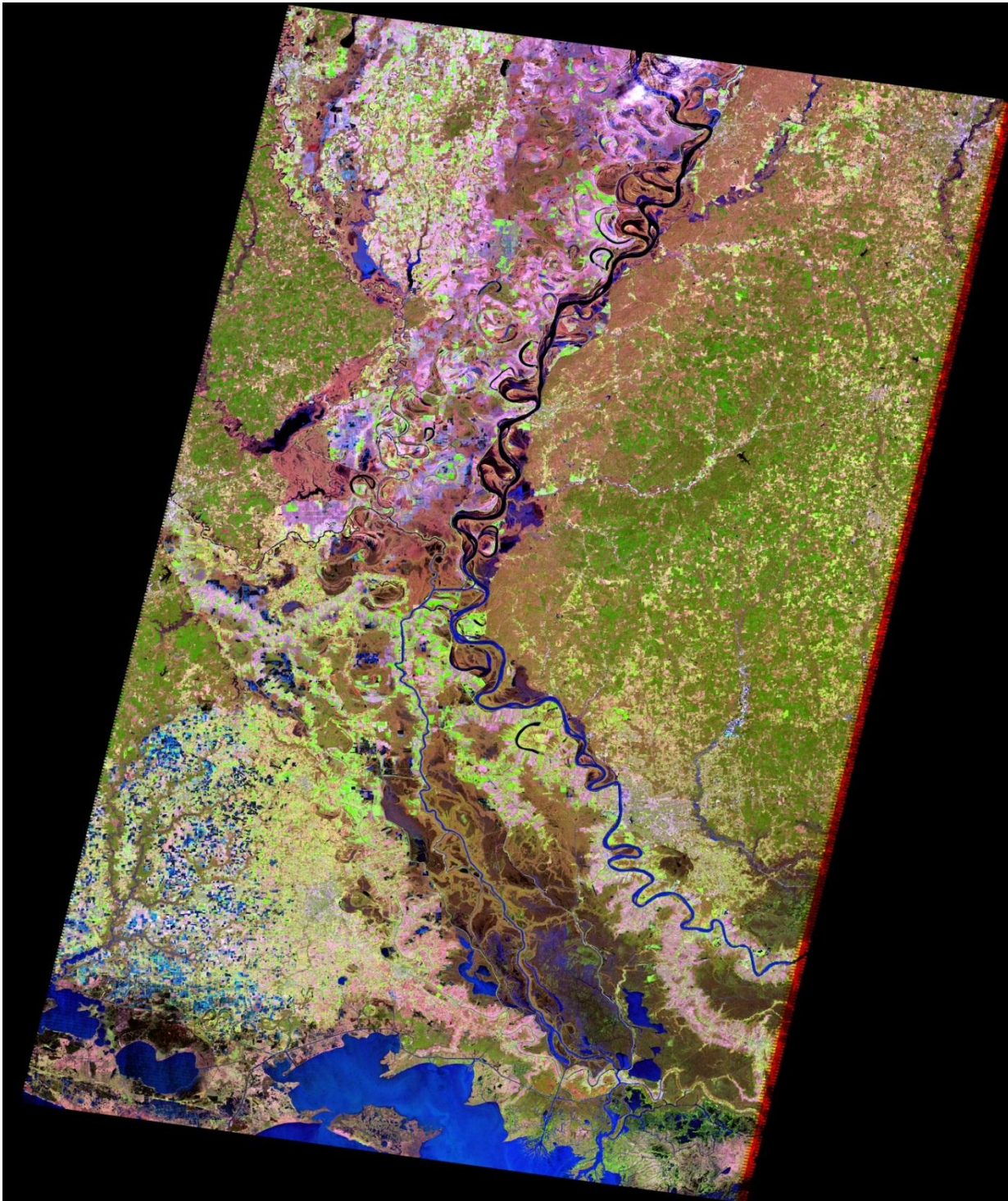


LandsatLook Viewer with Acres measurement selected for area shown in blue.

Landsat Image of Interest

The Lower Mississippi River

The Lower Mississippi River alluvial valley and the adjacent upland are distinct and highly diverse landscapes. The floodplain, by the very geologic processes that created it, has rich organic soils with a mix of cropland, forests, and forested wetlands. The agricultural diversity is high, ranging from rice and catfish



to corn and soybeans. The uplands are mostly small-scale farmland, with hardwood forest or a mixed forest of hardwood and pine. In this stunning Landsat 7 image of the Lower Mississippi on February 16, 2013, forests in the uplands are green (pine forests a slightly darker shade). Bare soil or soil with light vegetation cover appear in shades of pink and purple, and the bright lime green fields are likely areas with newly emergent crops or vegetation.

The Landsat mission is a global mission that captures images around the globe, all year-round. While this image may be useful for a number of practical management uses, such as monitoring agriculture or evaluating long-term effects of

drought, some images are particularly striking for their beauty. This and other Images of Interest can be found on the Landsat Image Gallery: <http://landsat.usgs.gov/gallery.php>.