



Landsat 8 Reprocessing to Begin February 3, 2014

Making Outstanding Data Even Better

The Landsat Project is committed to continually improving the data coming from its latest satellite, Landsat 8. The sensors on the satellite, the Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS), have proven to be outstanding instruments. Since its launch in February 2013, the project's engineers have been refining the data as they learn more about the performance of the satellite.

On February 3, 2014, the entire Landsat 8 archive will be cleared from the online cache and reprocessed to take advantage of calibration improvements identified during its first year of operation. All Landsat 8 scenes will be removed from the online cache at this time and these data will then be reprocessed starting with the most recent acquisitions and proceeding back to the beginning of the mission. Data will then become available for download. Scenes waiting to be reprocessed will also be available for on-demand product orders. Reprocessing is expected to take approximately 50 days.

A summary of the changes being made to the Landsat 8 Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS) data include:

1. All OLI bands (excluding cirrus Band 9) will have reflectance changes of up to 0.8 percent. (This can be compared to about a two (2) data value maximum change of Landsat 5-7 8-bit data). Visible striping may currently exist due to the improved sensitivity of OLI in dark uniform areas, such as water. This striping is reduced with this update. Changes to the cirrus Band 9 are more substantial, at about 7 percent.
2. The TIRS temperature offset noted on November 14, 2013 Calibration Notice on http://landsat.usgs.gov/calibration_notices.php is a primary driver for this reprocessing effort. These offsets remove about 2.1 K from Band 10 and about 4.4 K from Band 11, relative to products processed prior to February 3, 2014. Users should work with TIRS Band 10 data as a single spectral band (like Landsat 7 Enhanced Thematic Mapper Plus (ETM+)) and should not use Band 11 by itself or attempt a split-window correction using both TIRS Bands 10 and 11.

More details about the changes being made to the data is available in the January 29, 2014 Calibration Notice on http://landsat.usgs.gov/calibration_notices.php.

Most users will not need to reorder data currently in their local archive; however, users are encouraged to review all Landsat 8 calibration notices (website above) and evaluate the improvements as they relate to specific applications.

Overall, the Landsat 8 sensors are exceeding specifications. The performance of the OLI and TIRS data needs to be consistent over time, not just so that scientists can accurately compare the images from Landsat 8 itself but from previous Landsats as well. The high quality of data acquired by the Landsat satellites is what makes the Landsat collection unique. These ongoing assessments will strengthen the value of the entire Landsat archive, making the already outstanding data from Landsat 8 even better.

Please direct any questions about the Landsat 8 reprocessing effort to Landsat Customer Services: custserv@usgs.gov.