



# LANDSAT 7 MONTHLY UPDATE

The Landsat 7 Mission, developed by the National Aeronautics and Space Administration, is managed by the U.S. Geological Survey under authority established by Presidential Decision Directive NSTC-3.

## Program News

### IGS Metadata

IGS metadata from Canada, Australia, South Africa, Japan, China, and Europe continue to be archived successfully. As of March 29, 2002, there were 8,796 L7 IGS subintervals archived for 142,212 Landsat 7 Worldwide Reference System (WRS) scenes. IGS metadata from Brazil (CUB), and Thailand (BKT) were successfully tested and are ready for operations. IGS metadata from Argentina (COA) continue to be tested. The USGS IGS Web pages and the EOS Data Gateway IGS ordering link pages are in the process of being reviewed by each IGS, and several have provided updated URLs, text, and logos.

### Caterpillar Tracks

Since February 2000, the USGS has been investigating the "caterpillar track" phenomenon that occurs when the Scan Mirror (SM) and calibration shutter do not synchronize prior to imaging. The root cause of the tracks is an increase in the SM turn around time; that is, the time that it takes for the mirror to transition from forward to backward scans.

As part of its design, the Scan Mirror strikes a pair of bumpers at the end of each scan. This wears down the surface of the bumpers over time, thereby increasing the distance that the SM travels between strikes against the bumpers, which translates to a longer travel time. It has been predicted that at some time during the instrument's life, the travel growth would increase to a point at which the Scan Mirror would not be able to establish synchronization with the Calibration Shutter.

Engineers have seen some correlation between the appearance of tracks and lower temperatures of the calibration shutter hub. During operations, a short warm up time for the TM has allowed the mirror and shutter to synchronize prior to imaging. During the past several months engineers were able to control the "tracks" by increasing the instrument on-time. Recently Landsat 5 has exhibited periods where this synchronization either exceeded the warm up period or did not occur at all. The Flight Operations Team (FOT) is continuing to explore adjustments in the TM operations in an effort to regain synchronization.

One such adjustment is the exploration of "bumper mode". Since launch the TM has been operated in Scan Angle Monitor (SAM) mode. In SAM mode the time during which the scan mirror directs incoming light to the detectors is tightly controlled. This results in uniform scan lengths and excellent knowledge of pixel locations. The FOT is looking into changing the configuration of the TM from SAM mode to bumper mode. In bumper mode the mirror is allowed to scan at a fixed frequency (14.1 Hz). The calibration shutter has no trouble synchronizing at this frequency; however, the variability of the scan lengths increases in bumper mode. A small amount of data will be collected over the U.S. in bumper mode. Engineers will then determine if the processing systems can be modified to produce useable images.

## Technical News

### Data Validation and Exchange

In the month of March the biannual revalidations were successfully completed for the Cordoba, Argentina (Raw CC); Maspalomas, Spain (Raw CC); Hobart, Australia (L0Rp); Alice Springs, Australia (L0Rp); and the Beijing, China (L0Rp) ground stations. The Ulaanbaatar, Mongolia stations provided the USGS with L0Rp data that were validated to be of equivalent quality to the corresponding USGS data. The Alice Springs, Australia and Beijing, China stations provided the USGS with Raw CC data that were successfully validated. At this time there are 16 of the 18 IGSs validated using either the Raw CC or L0Rp data format.

## Meetings

### Business Partners Meeting

On April 19, 2002, a meeting of the USGS satellite Business Partners will be held at the USGS National Center in Reston, Virginia. Current and potential Business Partners will meet to discuss efficiencies of the program, policy changes, and plans for future programs. For further information, contact Paul Severson at [pseve.usgs.gov](mailto:pseve.usgs.gov) or by telephone at 605-594-6966.

### Landsat Technical Working Group Meeting

The USGS and NASA are hosting a joint technical/policy meeting during the week of June 17-21, 2002. The meeting, which will be held in Denver, Colorado combines the twelfth Landsat Technical Working Group (LTWG) meeting with a special meeting between the Landsat International Cooperators and the recently selected Landsat Data Continuity Mission (LDCM) formulation phase contractors. LTWG-12 will take place during the first half of the week. The balance of the week will be devoted to LDCM.

### LTWG-11

Landsat Technical Working Group meeting number eleven (LTWG-11) was held in Canberra, Australia the week of February 4-8, 2002. Representatives from eight of the ten International Cooperators attended. The attendees were welcomed by Peter Holland, General Manager of the National Mapping Division (formerly Auslig) of the newly organized Geoscience Australia. Other highlights included presentations by USGS on the status of both Landsat 5 and Landsat 7, reports from the International Cooperators on their product generation systems, and discussions on the CCSDS archive data format and standards for DVD media as they relate to product distribution.

## Related News

### Landsat Data Continuity

NASA, in partnership with the USGS, has selected two proposals for further development in response to a solicitation to provide the U.S. Government with Landsat-type data that will continue the rich 30-year heritage of the Landsat series of Earth-observing missions.

The companies selected for further proposal development are Resource 21 of Englewood, Colorado, and DigitalGlobe of Longmont, Colorado. During the first phase of this fully and open competition, prospects will have approximately nine months to further develop their technical and business plans, as well as a preliminary design of their system for providing future Landsat-quality data. During this formulation phase, prospects will conduct activities such as trade studies and analyses.

For further information about the Landsat Data Continuity Mission, please see: <http://ldcm.usgs.gov>

### EO-1 Mission

In the January issue of Landsat Monthly Update, it was announced the EO-1 mission had been extended through February 2002. Recent support has extended the mission through the northern hemisphere growing season. A decision will be made in the coming months on the future of the mission. Check <http://eo1.usgs.gov> for updates.

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**The Landsat monthly update is an informal communication tool, prepared monthly and distributed electronically to USGS Landsat partners, to provide information about Landsat activities and related topics of interest. Comments, corrections, and queries may be directed to Ronald Beck, USGS Landsat team, at the following e-mail address: [beck@usgs.gov](mailto:beck@usgs.gov).**

**U.S. Department of the Interior  
U.S. Geological Survey**