

LANDSAT MONTHLY UPDATE

August 2003

The Landsat Program is managed by the U.S. Geological Survey under authority established by Presidential Decision Directive NSTC-3.

Editor's Note:

The Landsat Monthly Update will be used as one of many mechanisms to keep interested parties informed about the efforts underway to deal with the Landsat data anomaly. Additionally, updated information will also be posted on the Landsat web site at landsat7.usgs.gov.

On Wednesday, September 3, 2003, the USGS Director authorized the Landsat Project Chief to attempt recovery of the scan line corrector (SLC) which malfunctioned on May 31, 2003.

Supported by several NASA TDRSS satellites as well as the USGS's own Landsat ground station at EROS Data Center (EDC) in Sioux Falls, South Dakota, a series of commands directed the instrument to operate using its redundant electronics. Additionally, several spacecraft subsystems associated with ETM+ operations and data transmission were moved to their 'Side-B' configurations. These are systems that had never been powered during the 4+ years since launch of Landsat 7 on April 15, 1999.

On Sunday, September 5, the Landsat 7 scan line corrector (SLC) was energized using the 'Side-B' redundant electronics in an attempt to restore the functionality lost when that system failed on May 31. While both the USGS flight operations team located at the NASA Goddard Space Flight Center in Greenbelt, Maryland and the ground operations team located at the EROS Data Center performed their roles in the test without error, the SLC failed to operate correctly.

Analysis will be carried out on both the spacecraft telemetry and the image data collected during the test in an attempt to gain additional insight into the exact nature of the mechanism's failure. However, the negative results of this test leave little hope that it will ever be possible to recover the SLC. The data collected without the SLC are still of very high radiometric and geometric fidelity, but leave a gap between some scans, resulting in about 25% less coverage.

In the coming days, the flight operations team and the ground operations team will report on the results of their analysis to the USGS and NASA. In addition, the flight operations team will begin preparations for returning the ETM+ and spacecraft components back to their primary 'Side-A' operational configuration. Once back on Side-A, the mission will resume collection of global imagery with the SLC powered off, as it has been doing since July 14.

Extensive work has already been done to develop processing systems for general distribution of the affected data (data without the benefit of the scan line correction.) The Landsat Project team is now turning its efforts towards re-establishing normal baseline operations with the "new" SLC-off data, with an objective of providing L1G SLC-off products to the user community by November 1st. Also, the team will work with the International Cooperator network to begin SLC-off data downlinks to their stations in the near future. Finally, an evaluation of "new" products will be initiated to determine if the Landsat can make the SLC-off data even more useful to customers.

LGSOWG-32

The Landsat Ground Station Operators Working Group (LGSOWG)-32 meeting is scheduled to take place the week of October 13, 2003 in Hiroshima, Japan. Meeting participants will spend considerable time discussing the activities

surrounding the Landsat 7 scan line corrector (SLC) anomaly and the efforts to recover the mechanism of the SLC. The USGS will lead discussions concerning the effects of the scan line problem to the Landsat 7 Project, International Cooperators and expectations for the coming year.

Also, given the resurgence of interest and importance of the Landsat 5 operation, presentations will be made on that mission's status, future plans and the opportunities for International Cooperators to participate.

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. If you have any ideas, comments, corrections, or successes you would like to share with the Landsat community, please contact Ronald Beck, USGS Landsat team, at the following e-mail address: beck@usgs.gov.