LANDSAT UPDATE

Landsat 3 was successfully launched into orbit on March 5, 1978. This satellite follows the same orbital path as the previous Landsats and provides continuation of Earth resource data acquisition. Landsats 2 and 3 orbits are separated by nine days providing the potential of 9-day repetitive coverage of the Earth's surface from space.

Landsat 3 is similar to the two preceding Landsats; however, the onboard sensor systems have been modified. The multispectral scanners (MSS) on Landsats 1 and 2 were designed to respond to Earth reflected sunlight in four spectral bands (bands 4, 5, 6 and 7). The Landsat 3 MSS, in addition to responding to the same four bands has a fifth band (band 8) that senses emitted (not reflected) thermal infrared radiation in the range of 10.4 to 12.6 micrometers. Band 8 measures temperatures between —13°C and 67°C and discriminates relative temperature differences as small as 1.5°C. This band is expected to be useful for monitoring volcanic action, power plant discharges of hot water, and geysers. Band 8 can be operated at any time during the orbit and can acquire nighttime thermal data during the satellite's ascending node.

The return-beam vidicon (RBV) camera system on Landsat 3 is significantly different from the RBV systems on the previous satellites. Instead of three cameras simultaneously sensing different wavelengths of reflected energy, the RBV system on Landsat 3 contains two broadband panchromatic cameras that produce adjacent images. Each camera responds to reflected energy wavelengths of 0.5 to 0.75 micrometers and covers a 99 by 99 km area, with a total swath width of approximately 185 km. Four RBV images, or subscenes, coincide approximately with one MSS scene. Each subscene has a spatial resolution nearly twice that of the MSS.

Landsat 3 also carries the space-borne relay component of a data collection system, which now is being used to relay platform data. The data collection system relay on Landsat 2 was shut down during the launch of Landsat 3, and will only be used again upon failure of the relay on Landsat 3.

NEW HANDLING AND PROCESSING SYSTEMS FOR LANDSAT DATA

NASA Goddard Space Flight Center (GSFC) and the U.S. Department of Interior, Geological Survey's EROS Data Center (EDC) are installing all-digital processing systems. At GSFC the satellite transmissions will be processed onto high-density digital tapes (HDTs). Two types of HDTs will be produced: partially (radiometrically) corrected and fully (radiometrically and geometrically) corrected. The fully corrected HDTs will be provided by GSFC to EDC beginning with MSS data in mid-1978 and RBV subscene data in the late fall, 1978. The EDC, a digital image processing system (EDIPS) will process the HDTs into digital and (or) photographic products; until this system is operational, however, RBV and MSS bands 4 to 7 data will continue to be processed by the previous system (using the electron-beam recorder). Band 8 data will be digitally processed using a high-resolution laser-beam recorder at GSFC. When the digital systems are fully operational, Landsat data products will include:

Nominal Image Size	**Film**	**Paper**	**RBV Landsat 1, 2 MSS Landsat 1, 2, 3**
55.8mm (2.2") Product	X		1:3,369,000
18.5cm (7.3") Product	X	X	1:1,000,000
37.1cm (14.6") Product		X	1:500,000
74.2cm (29.2") Product		X	1:250,000
			RBV Landsat 3
55.8mm (2.2") Product	X		1:1,684,500
18.5cm (7.3") Product	X	X	1:500,000
37.1cm (14.6") Product		X	1:250,000
74.2cm (29.2") Product		X	1:125,000

Computer compatible tapes (CCT), geometrically corrected or uncorrected, in band sequential (BSQ) or band interleaved by line (BIL) formats for MSS data, and subscene sequential (SSQ) format for Landsat 3 RBV data.

When EDIPS is implemented, non-standard orders requesting different map projection, resampling technique, and (or) uncorrected CCTs carry an additional cost for added processing and involve increased production time. Requests should be made in the User Services section, EROS Data Center, for information on these products and their prices.