

LDCM satellite sees its birthplaces

April 12 2013, by Holli Riebeek



LDCM acquired this image of Greenbelt, a Washington, D.C., suburb, on Apr. 2, 2013. Two versions of the image are shown, one made with visible light and the other incorporating infrared light. Winter brown vegetation and silver urban areas dominate the image made with visible light. Made with green, near infrared, and shortwave infrared light, the infrared light image highlights bright green grassy vegetation such as parks and the National Mall. Dormant vegetation, such as deciduous forest, is darker green. Urban areas are purple. Credit: NASA

Building and launching the Landsat Data Continuity Mission required teams of people across the United States. It is appropriate, then, that the satellite's early images include these views of the places that most contributed to its success: Greenbelt, Md.; Phoenix, Ariz.; Vandenberg

Air Force Base, Calif.; and Sioux Falls, S.D. The images are considered engineering data—data that is helping scientists and engineers ensure that the satellite and its instruments are operating as designed.

NASA oversaw the development, construction and launch of the [satellite](#) from NASA's Goddard Space Flight Center in Greenbelt, Md. LDCM carries two instruments: the Operational Land Imager (OLI) and the Thermal [Infrared Sensor](#) (TIRS). One of the instruments, TIRS, was built at NASA Goddard. The other was constructed by Ball Aerospace & Technologies Corporation in Boulder, Colo., shown in one of [LDCM's first images](#). Ball also built an important component of TIRS, its cryocooler, in Boulder.



Located immediately east of Phoenix, Ariz., Gilbert is silver in the natural color image shown above. The infrared image reveals more landscape features. The city is purple. Going east, tan bare earth gradually gives way to various shades of green representing different types of vegetation. LDCM acquired this image on Mar. 31, 2013. Credit: NASA

After the instruments were built, they were shipped to Orbital Sciences Corporation in Gilbert, Ariz., to be added to the spacecraft. The company built the spacecraft bus, which includes the mechanical structure, power systems, data storage and transmission systems, fuel and attitude control systems. The instruments were integrated with the spacecraft, and then the entire observatory went through extensive testing to determine that everything operated together properly.

LDCM launched from Vandenberg [Air Force Base](#) in southern California on Feb. 11, 2013, on an Atlas V rocket built by United Launch Alliance. ULA is headquartered in Denver, Colo. The successful launch put the satellite in to a polar orbit where it is now going through commissioning.



Vandenberg Air Force Base is surrounded on three sides by fields of growing crops and green mountains. Rockets launch from the base over the Pacific Ocean, minimizing the potential for damage if the launch goes wrong. LDCM launched successfully from Space Launch Complex 3 south of the airstrip. Credit: NASA

Once LDCM completes its check-out period and becomes operational, [NASA](#) will pass control of the satellite to the United States Geological Survey, and LDCM will become Landsat 8. The USGS will collect and distribute Landsat 8 data from the Earth Resources Observation and Science Center in Sioux Falls, S.D. The LDCM satellite transmits data to a network of receiving stations, which send the data to the EROS Center. Computers process the data into products that are made available free of charge over the Internet. The EROS Center maintains the more than 40-year-long Landsat data record and will begin adding Landsat 8 data to that record once the satellite becomes operational.

More information: For information about LDCM's first image, visit: www.nasa.gov/mission_pages/landsat8/landsat8_images-feature.html

For more information about the Landsat, visit: www.nasa.gov/landsat or landsat.usgs.gov

Provided by NASA

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