

The Science and Art of LIMA

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The Landsat Image Mosaic of Antarctica is almost complete with a 4-agency formal release scheduled in early October 2007. NASA, USGS, British Antarctic Survey and NSF have contributed to this IPY project. Nearly 1100 Landsat scenes from 1999-2001 have been used to create a nearly cloud-free composite of Antarctica north of 82.5oS. A variety of versions of the mosaic will be available including a 24-bit true color composite, a 24-bit false color composite; and digital stretches that enhance both saturated snow slopes and ice flow features. Every scene is available to the public (<http://lima.usgs.gov>), however all mosaic products will be "sharpened" using the panchromatic band to produce products with a 15 m spatial resolution. Great care has been taken to preserve the scientific meaning of the digital values of every pixel. Scenes were orthorectified using the RAMP digital elevation model and adjusted for solar illumination gradients caused by earth curvature. At-sensor radiances were converted to surface reflectances and corrected for non-Lambertian scattering effects to produce a nearly seamless mosaic.

The final products will facilitate a variety of scientific studies. In addition, the mosaic is being used as a means to familiarize the public with Antarctica through a NASA funded project called "Faces of Antarctica". This project takes advantage of the beauty of Antarctica, captured in the true-color LIMA mosaic to engage the public in a variety of educational activities and exercises (<http://lima.nasa.gov>).