LANDSAT IMAGE MOSAIC OF ANTARCTICA (LIMA)

Comparison of natural-color image with false-color image

Natural-color image

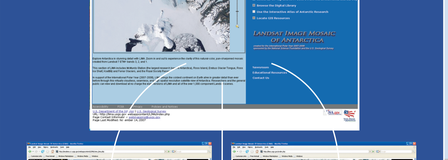
False-color image

LIMA and other image mosaics of Antarctica

RADARSAT ANTARCTIC MAPPING PROJECT (RAMP) 1997
Mosaic at 25 m resolution showing surface morphology

MOSAIC OF ANTARCTICA (MOA) 2004
Mosaic at 125 m resolution using MODIS

LANDSAT IMAGE MOSAIC OF ANTARCTICA (LIMA) 2007
Color image mosaic at 15 m resolution using Landsat ETM+ images



Images showing detail of ice flow features

Medium contrast stretch

High contrast stretch

Access LIMA on the Antarctic Web Portal

View and download the eight versions of LIMA and all the component Landsat scenes on the Antarctic Web Portal. Scientists and the general public can download the entire seamless mosaic or just the specific areas they need.

The LIMA online map viewer displays the mosaic and ancillary Geographic Information System (GIS) features, such as location names, in polar stereographic projection. Web mapping services provide access to the eight versions of the mosaic over the Internet with desktop GIS tools.

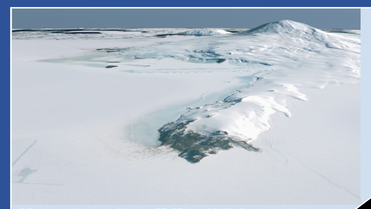
Access LIMA data
http://lima.usgs.gov/

NASA LIMA Education and Outreach
http://lima.nasa.gov/

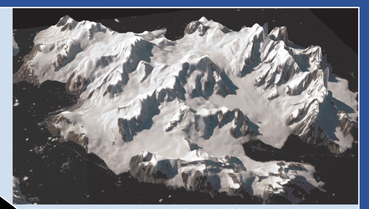
Reference: Scambos, T. A. et al. (2007), MODIS-based Mosaic of Antarctica (MOA) data sets: Continent-wide surface morphology and snow grain size. Remote Sensing of Environment, Volume 111 (2-3): 242-257

Poster compiled and published by the BAS MAPPING AND GEOGRAPHIC INFORMATION CENTRE, 2007
British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET. http://www.antarctica.ac.uk

Printed by Victoria Litho Ltd., UK



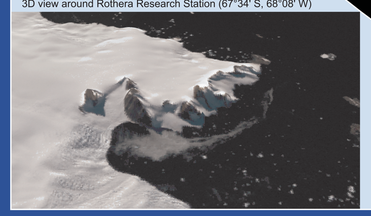
3D view of McMurdo Station (77°55′ S, 166°39′ E) using LIMA mosaic



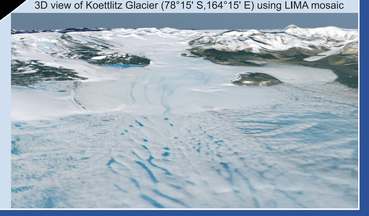
3D view of Pourquoi Pas Island (67°41′ S, 67°30′ W) using LIMA mosaic

1:10 000 000
Scale correct at 71°S
Projection: Polar Stereographic
Spheroid: WGS84

3D view around Rothera Research Station (67°34′ S, 68°08′ W)



3D view of Koettlitz Glacier (78°15′ S,164°15′ E) using LIMA mosaic



LANDSAT IMAGE MOSAIC OF ANTARCTICA (LIMA)

In support of the International Polar Year (2007–2008), the Landsat Image Mosaic of Antarctica (LIMA) brings the coldest continent on Earth alive with a comprehensive view of Antarctica. The U.S. Geological Survey (USGS), the National Aeronautics and Space Administration (NASA) and the British Antarctic Survey (BAS), with funding from the National Science Foundation (NSF), created the seamless LIMA mosaic along with an Antarctic Web Portal and online map viewer.

Choose from eight versions of LIMA

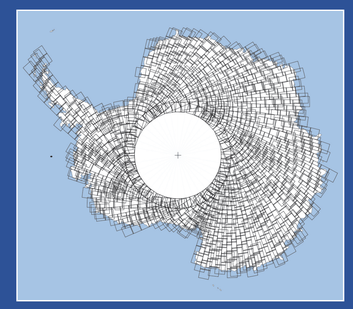
LIMA is available in two principal versions and six enhanced versions. The natural-color, pan-sharpened version merges Landsat ETM+ bands 3, 2, and 1 (red, green, and blue) at 30 m spatial resolution with the 15 m colorless panchromatic band 8. The false-color, pan-sharpened version merges Landsat ETM+ bands 4, 3, and 2 (near-infrared, red, and green) with the panchromatic band 8. Both the natural-color and false-color, pan-sharpened versions of LIMA are available in different stretches that enhance details in the snow and ice.

Discover how LIMA was created

The LIMA team identified 1,073 scenes from more than 8,000 Antarctica scenes taken by the ETM+ sensor since Landsat 7 was launched in 1999. Each Landsat 7 scene is 184 km by 170 km (115 mi by 105 mi). As much as possible, scientists chose adjacent scenes from a single Landsat pass over Antarctica because of the consistent sun angles and weather conditions. Then each Landsat scene was processed with elevation data and a sun-angle correction to ensure surface features were accurately represented. Finally, the team used custom software to merge the processed Landsat scenes into the seamless mosaic.

LIMA is the highest resolution, continuous dataset for the whole continent north of the 82°S Landsat orbital limit. The area between this limit and the South Pole is completed using imagery from the MODIS Mosaic of Antarctica (MOA) (see http://nsidc.org/data/moa).

Outlines of Landsat ETM+ scenes used in LIMA



Zoomed images illustrating sharp resolution available at increasing scales

Erebus Glacier Tongue
near Hut Point, Ross Island
(77°42′ S,166°40′ E)