



# Upcoming Landsat Products

9 January 2007

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U.S. Geological Survey

# ASPRS Survey Results

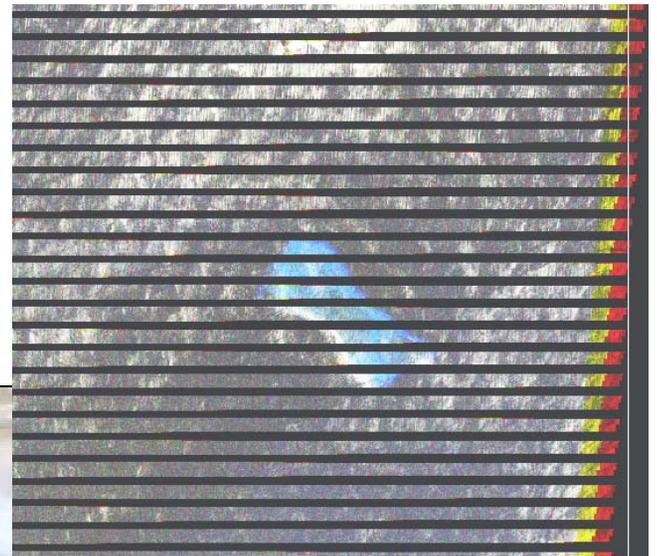
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- **Future of Land Imaging**
  - ◆ PE&RS, January 2007
- **72%: Landsat is a primary, critical dataset**
- **\$935M of economic impact in the U.S. per year**
- **78%: Landsat does not meet needs due to L7 SLC failure**

# ASPRS Survey Results

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# L7 SLC-off Gap-Fill

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<b>Gap-Fill Type</b>	<b>Landscape Pattern</b>	<b>Same-Day Radiometry</b>
Interpolation		✓
SLC-off & SLC-on		
SLC-off & SLC-off		
Segment-based		



# L7 SLC-off Gap-Fill

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SLC-off & SLC-off	✓	
Segment-based	✓	✓

# Segment-Based Gap Fill

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Landsat 5, 2000



# Segment-Based Gap Fill

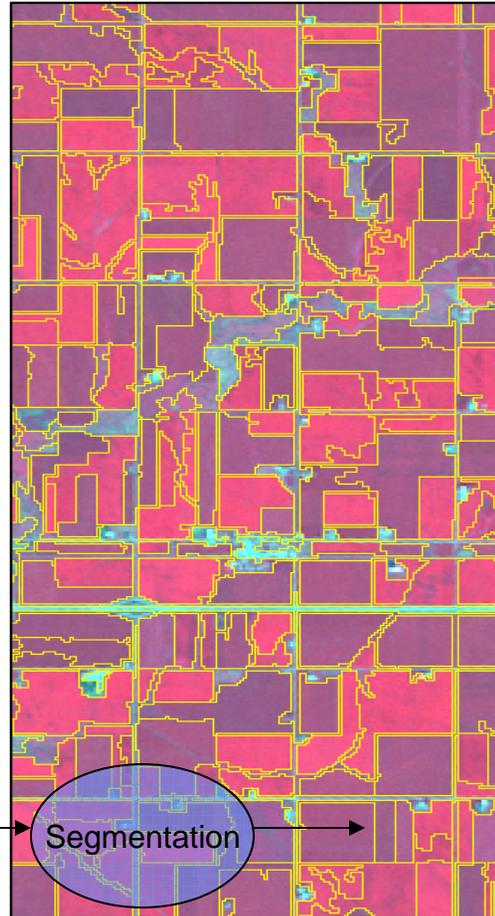
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Landsat 5, 2000



Base Image

Segments

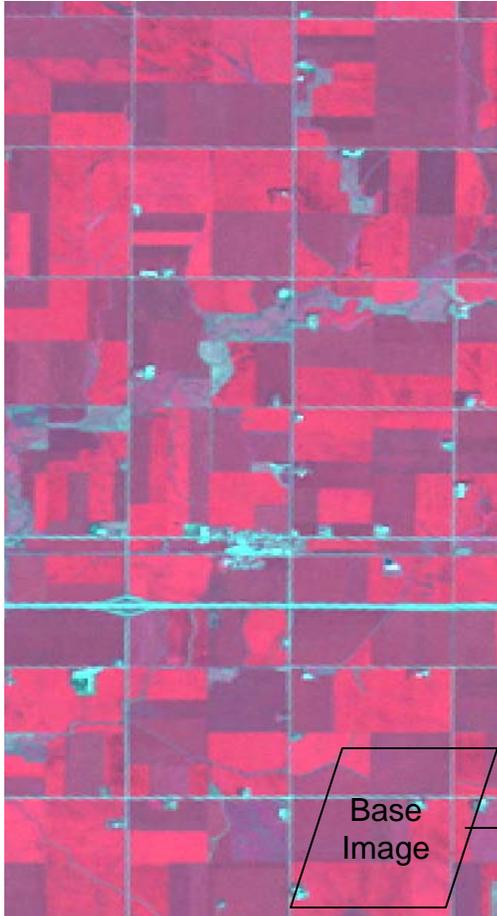


Segmentation

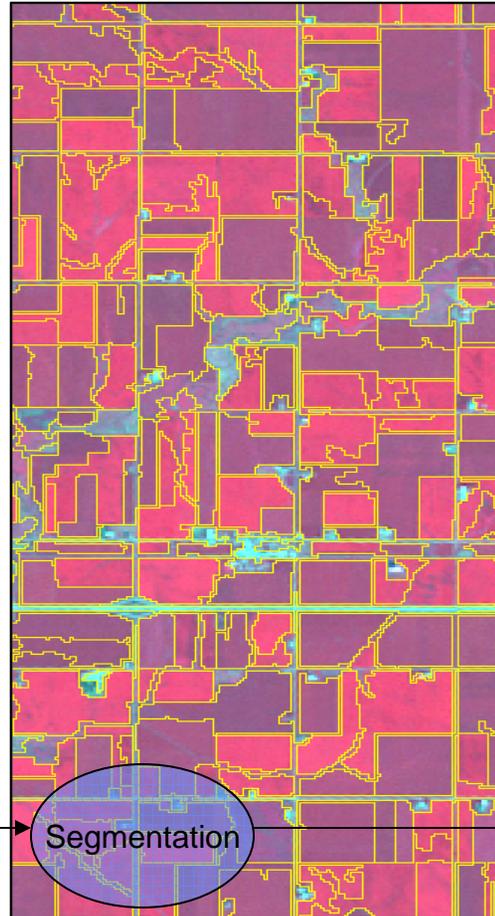


# Segment-Based Gap Fill

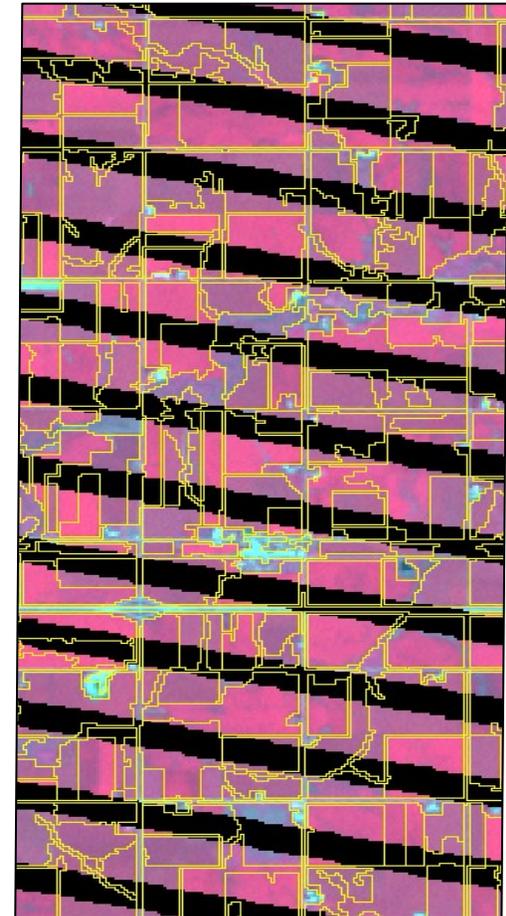
Landsat 5, 2000



Segments

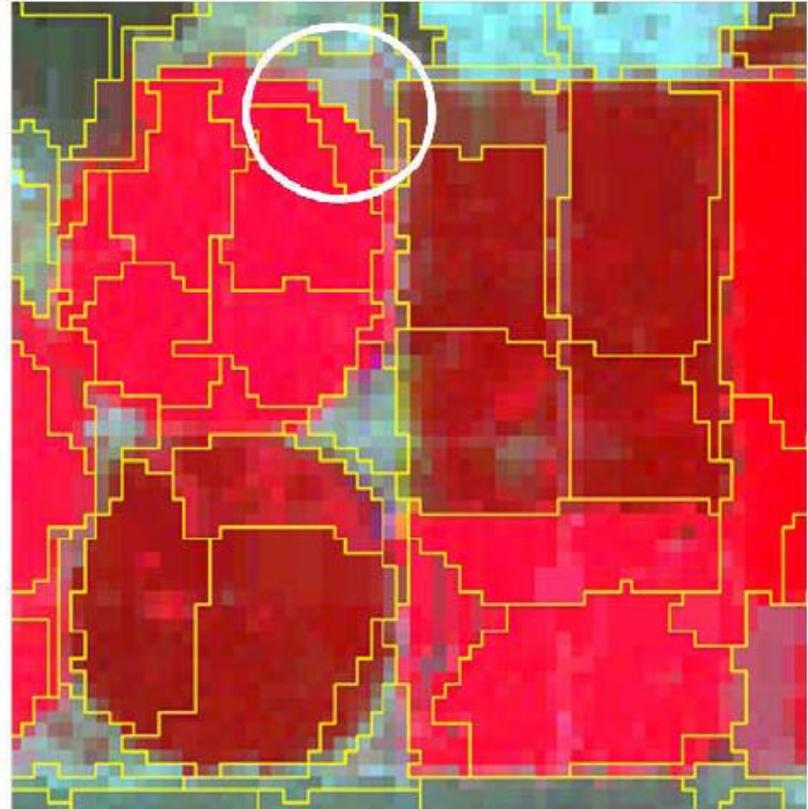
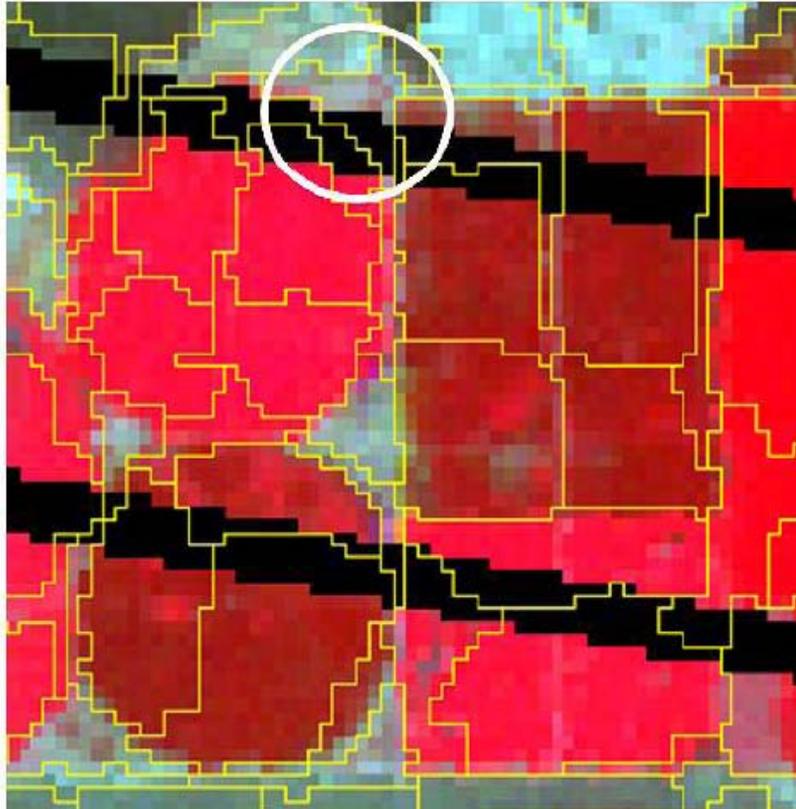


SLC-off



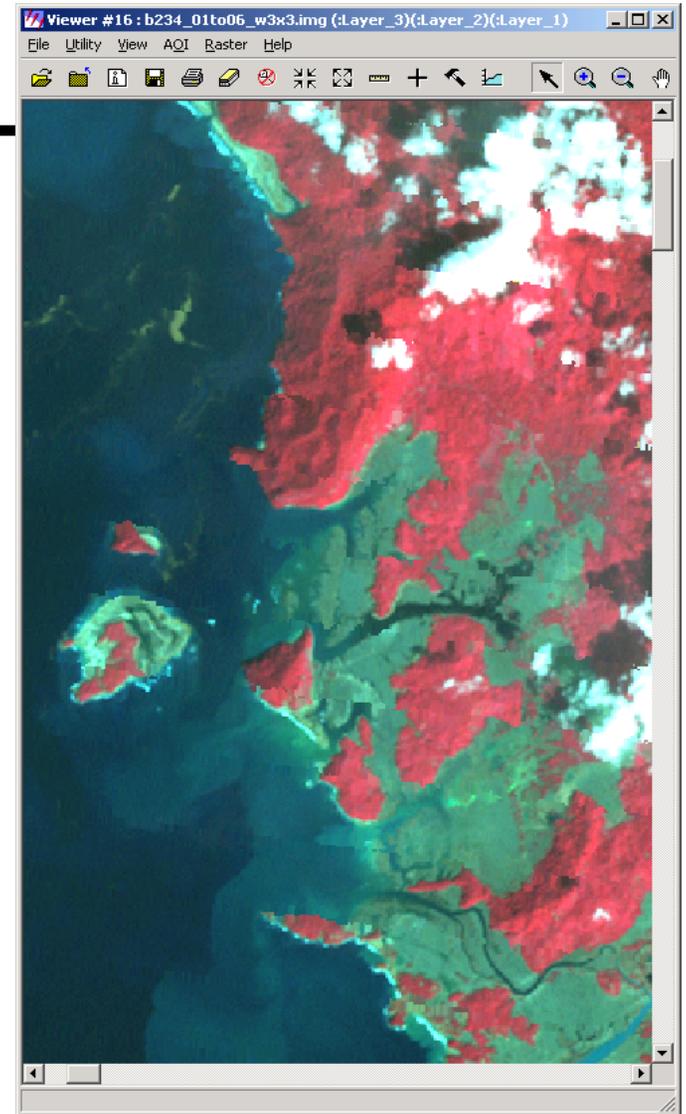
# Closeup of Gap-Fill

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Adapted from Maxwell *et al.*, in print.



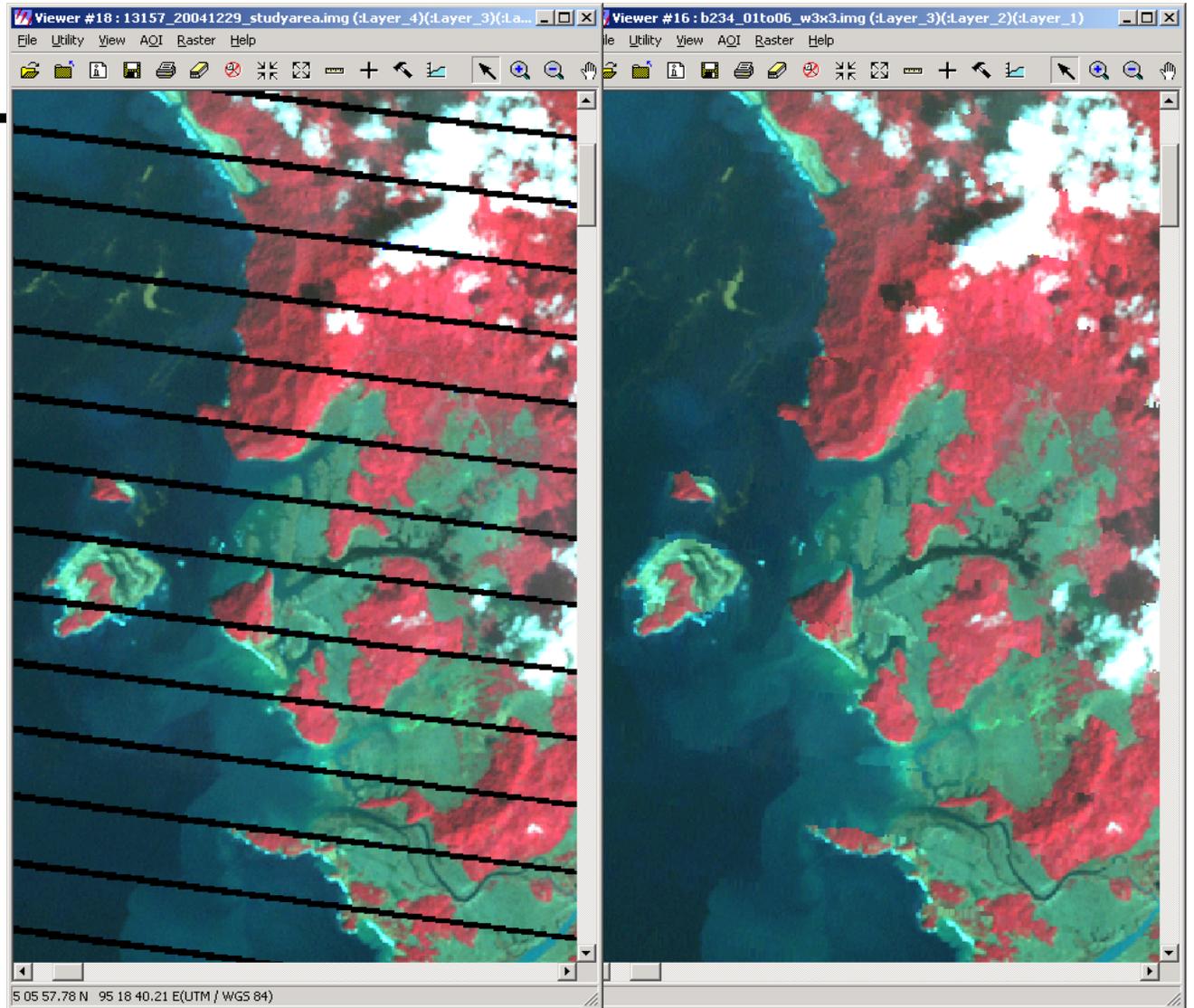


**29 December 2004, L7**

**Filled**



Sumatra  
Lat: 5 06 45.70  
Long: 95 20 38.38



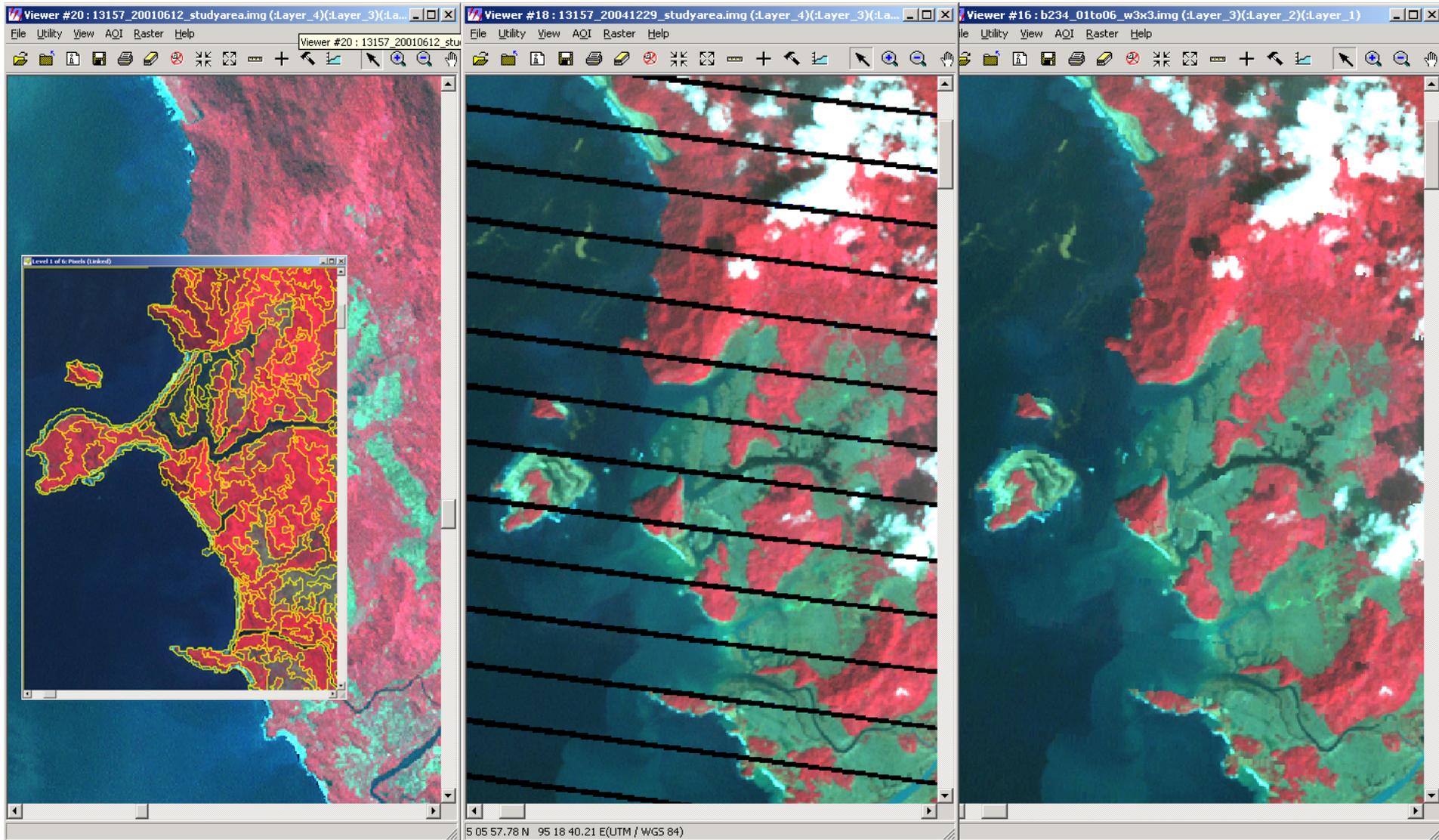
SLC-off

29 December 2004, L7

Filled



Sumatra  
 Lat: 5 06 45.70  
 Long: 95 20 38.38



**12 June 2001, L7**

**SLC-off**

**29 December 2004, L7**

**Filled**

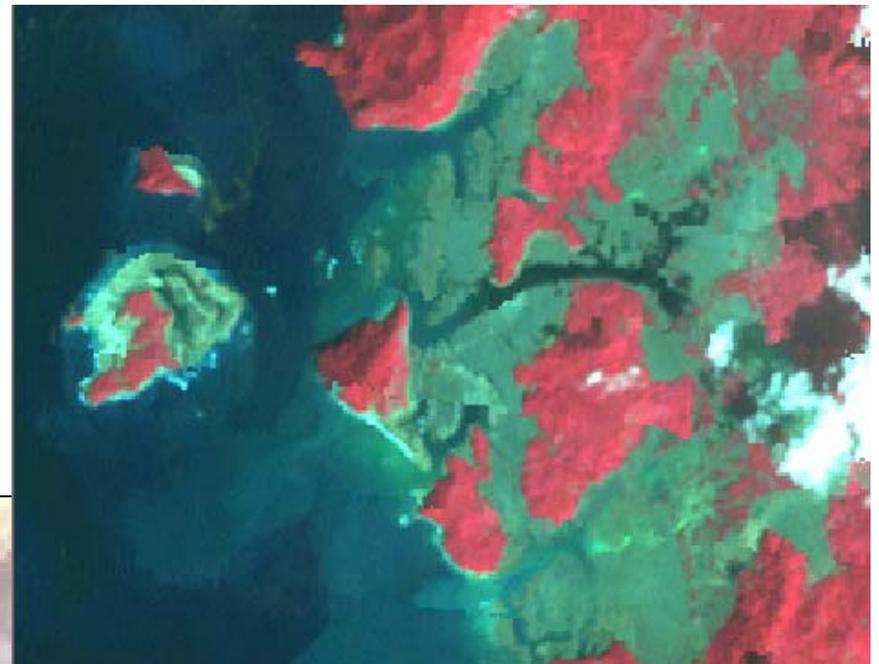


Sumatra  
 Lat: 5 06 45.70  
 Long: 95 20 38.38

# Appropriate Uses: Scale Matters

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- **Inappropriate for phenomena that could be lost in gaps or in regions with high rates of land change**
  - ◆ Urban growth
  - ◆ Timber harvest
- **Can be used for some change analysis**
  - ◆ Tsunami
- **Must be interested in broad area information**
  - ◆ Agriculture
  - ◆ Phenological changes



# Submarine Crash Shows Navy Had Gaps in Mapping System

By CHRISTOPHER DREW

Published: January 15, 2005

## Correction Appended

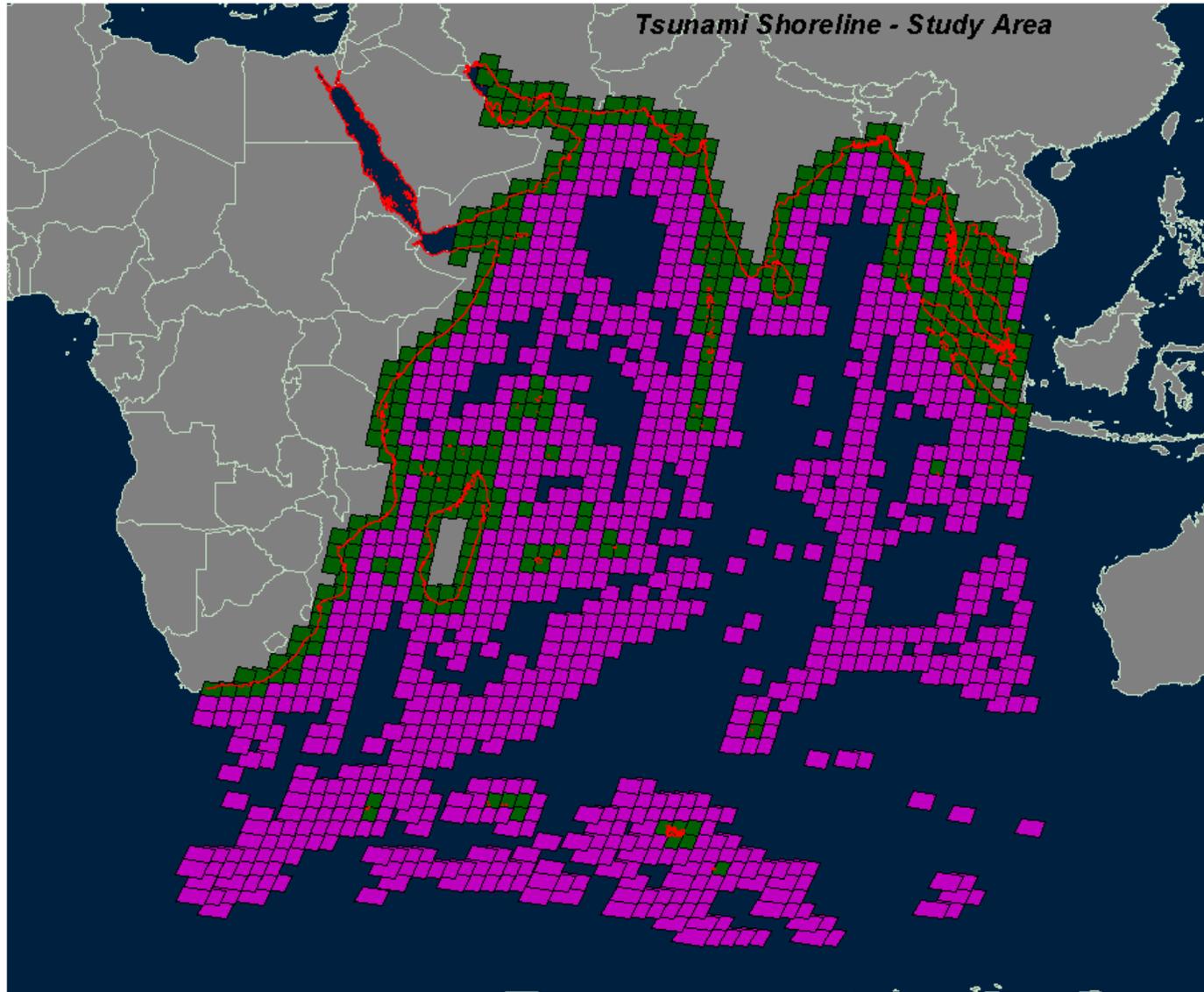
Sailors on the San Francisco, a nuclear-powered attack submarine, had just finished cleaning the vessel last Saturday as it sped along 500 feet beneath the surface of the South Pacific. Submarines run blind, just listening for sounds of danger. And to the captain and other officers relying on undersea navigation charts, everything seemed clear.

### ARTICLE TOOLS

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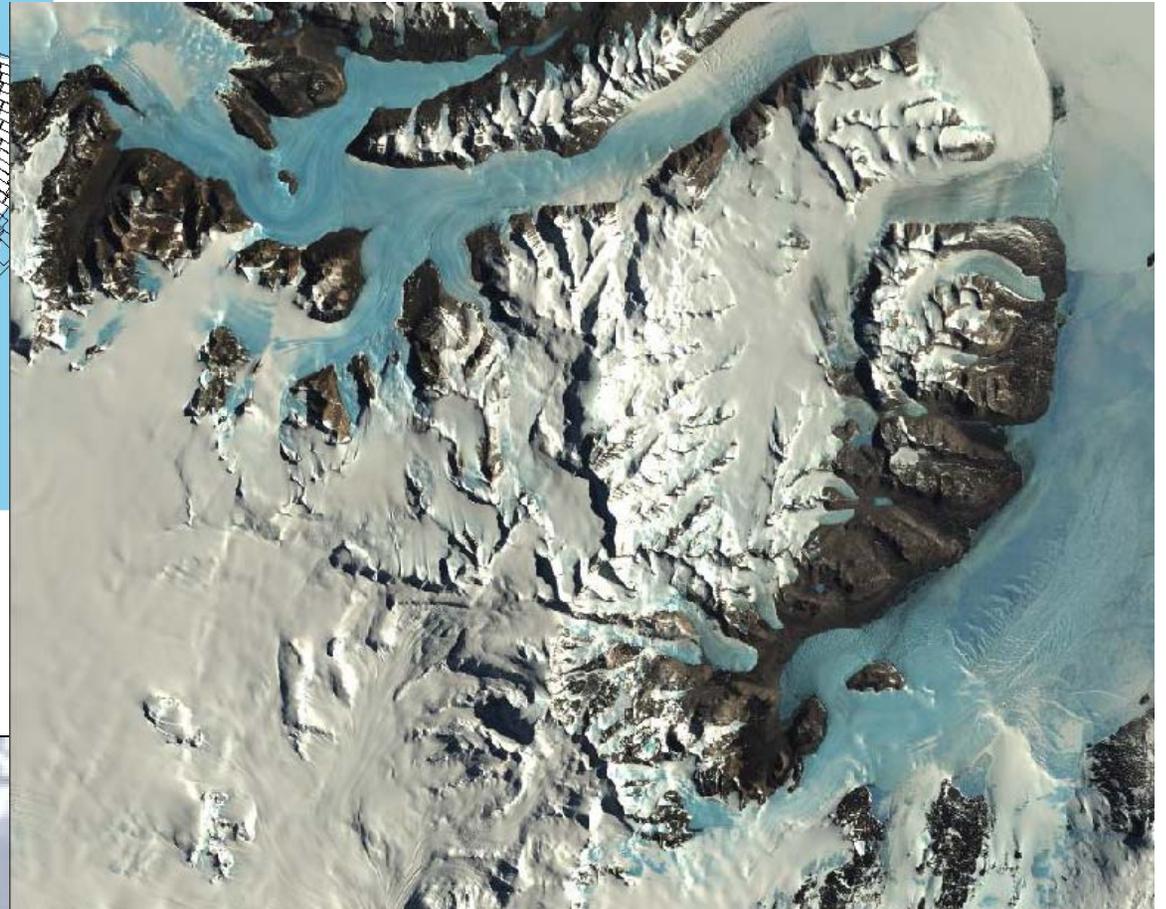
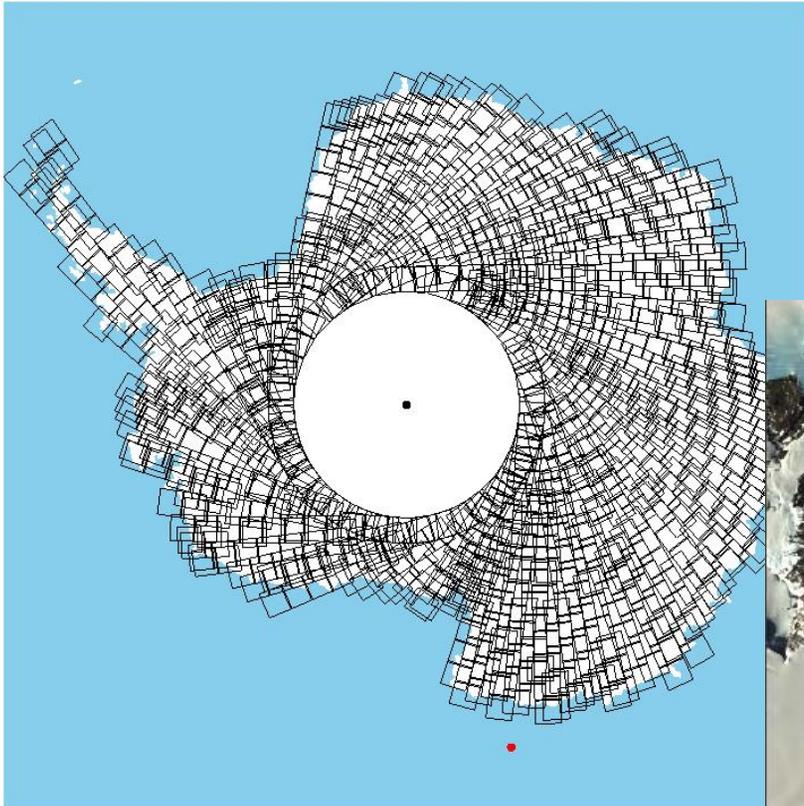


# Indian Ocean Campaign



# Landsat Image Mosaic of Antarctica

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 INTERNATIONAL 2007-2008  
**POLAR YEAR**

 **USGS**

# New Products in GloVis

## Long-Term Archive

- MRLC
- MTBS
- Decadal Data

The screenshot displays the USGS Global Visualization Viewer interface. The main window shows a satellite image with a yellow bounding box. The interface includes a menu bar (Sensor, Resolution, Map Layers, Tools, File, Help) and a list of sensors on the left. The MRLC sensor is selected, and a dropdown menu shows options for MRLC 2001 TC, MRLC 2001 RA, and MRLC 1992. Below the sensor list is a small map of the United States. The main image area shows a multi-layered satellite image with a yellow bounding box. The interface also includes a control panel with fields for WRS-2 Path/Row (29, 30), Lat/Long (43.2, -97.1), Max Cloud (100%), and Scene Information (ID: 5029030000635010, Cloud Cover: 0%, Qty: 9, Date: 2006/12/16). There are buttons for Prev Scene, Next Scene, and a Landsat 4-5 TM Scene List. The USGS logo is visible in the bottom left and right corners.

**USGS Global Visualization Viewer**

Sensor Resolution Map Layers Tools File Help

Aerial  
ASTER  
EO-1  
Landsat  
MODIS Aqua  
MODIS Terra  
MRLC  
Orthorectified

MRLC 2001 TC  
 MRLC 2001 RA  
 MRLC 1992

WRS-2 Path/Row: 29 30 Go  
Lat/Long: 43.2 -97.1 Go

Max Cloud: 100% [Left Arrow] [Up Arrow] [Down Arrow] [Right Arrow]

Scene Information:  
ID: 5029030000635010  
Cloud Cover: 0% Qty: 9  
Date: 2006/12/16

Dec: 2006 Go

Prev Scene Next Scene

Landsat 4-5 TM Scene List

Add Delete Order

1000m No Limits Set

USGS

# L7 Terrain-corrected Product

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- **Terrain-corrected product (L1T)**
- **Required for Segment-based gap-fill product**
- **Allow for Standard Product development**

# Looking to LDCM: Standard Product

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- **Processed product** (unlike other archive holdings)
- **Automatically generated**
  - ◆ Predetermined parameters
    - e.g., Terrain-corrected, GeoTIFF
- **Available via FTP**
- **Pilot Dataset**
  - ◆ US only – includes Alaska and Hawaii
  - ◆ L7 ETM+ SLC-off only – 2003 to present (and ongoing)
  - ◆ < 10% cloud cover, 9 quality

\*Policy resolution required prior to implementation\*