

# EARTH OBSERVATION at Geoscience Australia



Australian Government  
Geoscience Australia

Geoscience Australia acquires satellite imagery daily, from a range of earth observation satellites, at our ground reception facilities at stations in Alice Springs and Hobart. The satellite image data vary in their spatial extent and resolution and have a range of applications. This poster provides some examples of the imagery provided by Geoscience Australia to a range of Government and other clients.



## MODIS

The two MODIS or Moderate Resolution Imaging Spectrometer, images on this poster show Cyclone George in March 2008 over Western Australia, and Cyclone Larry in March 2006 over Eastern Australia. These are full 2330 km swath images from the MODIS instrument.

The MODIS instrument is on-board both the TERRA and AQUA satellites. The spatial resolution of the MODIS instrument ranges from 250 m to 1 km. The spectral bands used in these images are bands 1, 4 and 3 to create a 'true colour' image. MODIS data are a primary source of fire hotspots information available from our SENTINEL system.

## Landsat 5 & Landsat 7

Geoscience Australia has been acquiring Landsat data since 1979. The Landsat 5 and 7 satellites were launched in March 1984, and April 1999 respectively.

There are two Landsat images on this poster. The first is a Landsat 7 image of a rare cloud free day in Tasmania in October 2007. The Landsat 7 ETM+ instrument has operated with a significant technical malfunction since May 2003. The malfunction creates consistent data gaps during the imaging process. The second is a Landsat 5 image of the flooding at Bairnsdale, Victoria, in June 2007. Landsat imagery is used in topographic mapping, emergency management, geological, agricultural, and environmental monitoring applications.

## ALOS AVNIR-2 and PALSAR

The Advanced Land Observing Satellite (ALOS), has three imaging sensors, PRISM, AVNIR-2 and PALSAR. The image data acquired by these instruments are 2.5 metre resolution panchromatic data, 10 metre multispectral data, and Synthetic Aperture RADAR (SAR) data with a spatial resolution ranging from 20 to 100 metres. The AVNIR-2 instrument has a swath width of 70 km and measures radiance reflected from the earth's surface in the visible and near infrared section of the electromagnetic spectrum. The AVNIR-2 image on this poster is an image of the Newcastle floods in June 2007. The PALSAR image on this poster was acquired in October 2007 and covers the eastern side of Cape York.

## IRS Resourcesat

The IRS Resourcesat-1 satellite (IRS-P6) was launched in October 2003. Geoscience Australia began acquiring image data in February 2008 as part of Geoscience Australia's Landsat Contingency Plan. This plan aims to provide continued remote sensing data services, for land and water resource management applications in Australia that rely on Landsat-type imagery. We acquire imagery from two of the instruments onboard the IRS-P6 spacecraft, LISS-III and AWiFS. The multispectral LISS-III and AWiFS image data have a spatial resolution of 23.5 metres and 56 metres respectively. The IRS-P6 image on this poster shows a section of Cape York.