product news

New Radiometric Map of Australia

The new full-colour Radiometric Map of Australia was released by the Minister for Resources and Energy, The Hon. Martin Ferguson AM MP, on 22 February 2008 The map is part of a range of digital radiometric products that will directly assist exploration for uranium and thorium as well as heat flow studies and the assessment of geothermal resources. It will also benefit environmental studies and soil and geological mapping.

The new map has been developed by combining more than 450 individual surveys into a single seamless compilation which shows the distribution of the radioactive elements potassium, uranium and thorium across the continent. It shows potassium in red, uranium in blue and thorium in green with the colours combined according to the relative concentrations of the radioelements. The radiometric responses and patterns in the ternary images largely reflect the surface geochemistry and mineralogy of bedrock and regolith materials. The map creates new opportunities for scientists and explorers to relate geochemical patterns in a specific area to similar patterns observed in another part of Australia.

Since airborne surveys commenced in 1951 under Geoscience Australia's predecessor, the Bureau of Mineral Resources, the Earth's magnetic field and gamma-radiation from the ground has been measured over more than 80 percent of the continent. The airborne gamma-ray data had been collected as numerous separate surveys over many years and the equipment and procedures used evolved over time. Consequently, data from different surveys could not be easily compared because they could not be registered to a common datum or baseline.

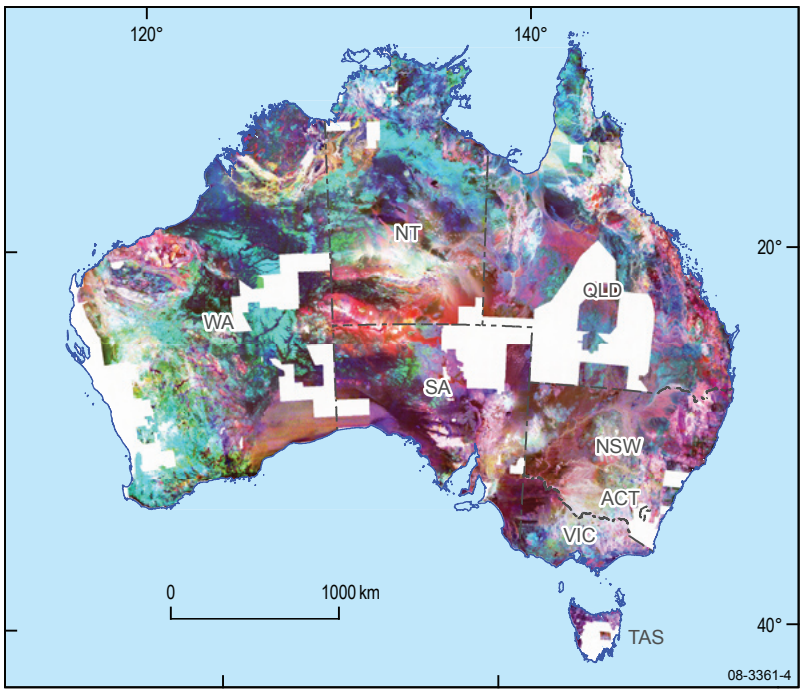


Figure 1. Ternary image of Australia (potassium in red, uranium in blue and thorium in green) derived from the new levelled National Radioelement Database.

Geoscience Australia's Onshore Energy Security Program, which commenced in 2006 to provide pre-competitive geoscience information to boost investment in exploration for onshore energy resources, provided an opportunity to solve this problem. As part of this program, Geoscience Australia commissioned UTS Geophysics to fly an Australia-Wide Airborne Geophysical Survey (AWAGS) at a cost of $2.6 million.

The survey covered the entire continent with north-south flight lines spaced 75 kilometres apart, and east-west tie lines spaced 400 kilometres apart. Gamma-ray spectrometric data, acquired at a height of 80 metres along the flight lines was processed according to international specifications and the final estimates of the concentrations of the radioelements comprise the new Australian radioelement baseline.

In collaboration with the state and the Northern Territory geological surveys, scientists at Geoscience Australia used the processed AWAGS data to bring all of the surveys in the national database to the new baseline. The levelled surveys were then compiled to produce a seamlessly

product news

merged single map for the whole continent underpinned by digital data at 100 metres resolution for each of potassium, uranium and thorium.

Copies of the map may be obtained from the Geoscience Australia Sales Centre. The gridded dataset can be downloaded free-of-charge in ER Mapper format from the Australian government's Geophysical Archive Data Delivery System (GADDS) download facility.

Related websites

Radiometric Map of Australia
www.ga.gov.au/minerals/research/national/radiometric/

Geophysical Archive Data Delivery System (GADDS)
www.geoscience.gov.au/gadds

For more information

phone Murray Richardson on +61 2 6249 9229
email murray.richardson@ga.gov.au
phone Geoscience Australia Sales Centre on Freecall 1800 800 173 (in Australia)
email sales@ga.gov.au

New geophysical datasets released

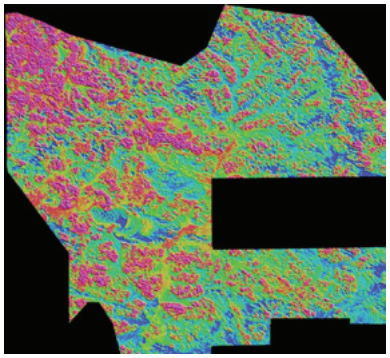
Datasets from five new airborne magnetic and radiometric surveys and three new ground gravity surveys have been released since November 2008. The data from these surveys can be interpreted to reveal the sub-surface geology of these areas and will be a valuable tool in assessing the mineral potential of the respective survey areas and will assist mineral exploration.

The South Kimberley airborne magnetic and radiometric survey covers the area in Western Australia where the Early Proterozoic Halls Creek Province meets the younger sediments of the Canning Basin. The Dumbleyung airborne magnetic and radiometric survey covers the soils and geology of the Waging, Dumbleyung, Kukerin, Kojonup and Katanning areas in southern Western Australia. This survey was funded by the South West Catchments Council (SWCC) in partnership with the Western Australian Department of Mines and Petroleum.

The Cooper Basin East & West airborne magnetic and radiometric surveys cover the Early Permian to Early Triassic Cooper Basin that underlies the Mesozoic Eromanga Basin in southern Queensland. The Normanton airborne magnetic and radiometric survey covers the Karumba Basin in northern Queensland.

The Westmoreland - Normanton gravity survey covers the Carpentaria and Karumba Basins, the Windimurra gravity survey covers the northern Yilgarn Province in Western Australia and the Central Arunta gravity survey covers the area where the Arunta Block meets the Amadeus and Georgina Basins in the Northern Territory.

All of these surveys were managed by Geoscience Australia on behalf of the relevant state geological survey. The data have been incorporated into the national geophysical databases. The point-located and gridded data for the surveys can be obtained free online



using the Australian governments' Geophysical Archive Data Delivery System (GADDS).

For more information

phone Murray Richardson on +61 2 6249 9229
e-mail murray.richardson@ga.gov.au

Related websites

Geological Survey of Queensland
www.dme.qld.gov.au/mines/about_us.cfm

Geological Survey of Western Australia
www.dmp.wa.gov.au

Northern Territory Geological Survey
www.nt.gov.au/d/Minerals_Energy/Geoscience/

product news

Table 1. Details of the airborne magnetic, radiometric and elevation surveys.

Survey	Date	1:250 000 map sheets	Line spacing/ terrain clearance/ orientation	Line km	Contractor
South Kimberley (WA)	January – October 2008	Lennard River (pt), Noonkambah (pt), Lansdowne (pt), Mount Ramsay, Mount Bannerman (pt)	400 m 60 m north – south	163 519	GPX Surveys Pty Ltd
Dumbleyung (WA)	March – November 2008	Dumbleyung (pt), Corrigin (pt).	100 m, 400 m 30 m, 60 m north – south	75 433	Fugro Airborne Surveys Pty Ltd
Cooper Basin East (Qld)	January – September 2008	Windorah (pt), Eromanga, Thargomindah, Bulloo, Quilpie (pt), Toompine (pt), Eulo (pt).	400 m 60 m north – south	215 769	UTS Geophysics Pty Ltd
Cooper Basin West (Qld)	November 2007 – November 2008	Birdsville (pt), Betoota (pt), Canterbury (pt), Barrolka, Durham Downs, Tickalara	400 m 60 m north – south & east – west	210 057	Fugro Airborne Surveys
Normanton (Qld)	April – September 2008	Galbraith (pt), Walsh (pt), Normanton (pt), Red River (pt).	400 m 80 m agl east–west	114 487	Thomson Aviation Pty Ltd

Table 2. Details of gravity surveys.

Survey	Date	1:250 000 map sheets	Station spacing, orientation	Stations	Contractor
Windimurra (WA)	August –September 2008	Cue (pt), Sandstone (pt), Kirkalocka (pt), Youanmi (pt), Ninghan (pt), Barlee (pt).	2 500 m east – west	6 041	Atlas Geophysics Pty Ltd
Westmoreland – Normanton (Qld)	May – August 2008	Mornington (pt), Westmoreland (pt), Burketown (pt), Normanton, Galbraith (pt), Walsh, Red River.	4 000 m east – west	6 411	Integrated Mapping Technologies Pty Ltd
Central Arunta (NT)	May – August 2008	Hermannsburg (pt), Napperby (pt), Mount Peake (pt), Alice Springs (pt), Alcoota (pt), Barrow Creek (pt), Hale River (pt), Illowga Creek (pt), Huckitta (pt), Hay River (pt).	500 m, 1000 m, 2000 m, 4000 m east – west	11 827	Atlas Geophysics Pty Ltd

product news

NATMAP product range expands

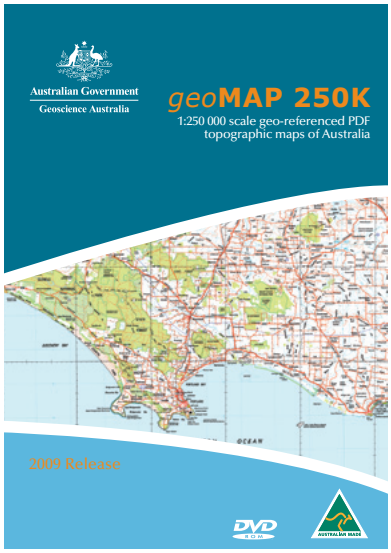
For many years Geoscience Australia's national topographic map series, known as NATMAPs, has provided the topographic information necessary to explore and develop our vast continent. The flagship product in the NATMAP range has been the 1:250 000 scale (250K) maps which are distributed as paper maps and digital data in a variety of formats.

A welcome and innovative addition to this range is ***geo*MAP 250K** which provides a modern digital approach to the delivery and use of maps. This new product has coverage of Australia at 1:250 000 scale in geo-referenced Portable Data Format (PDF) on a single DVD ROM. PDF is a widely used format created by Adobe Systems which uses software to view the information.

The geo-referencing capability of ***geo*MAP 250K** facilitates co-ordinate readout, measurement of distance and area, the import of overlay files and GPS tracking. A set of 20 000 alphabetically arranged bookmarks allows the user to quickly find locations across Australia. Alternatively, common pan and zoom tools allow navigation to a specific area. The index map includes hyperlinks which load a map when the user clicks on the map name. Moving to an adjacent map sheet is easily done by clicking on an adjoining area of the map on display.

To use the geo-reference capability of ***geo*MAP 250K**, additional software will be required. Both types of software are available for download free of charge and links to the software websites are included with the product.

The ***geo*MAP 250K** PDF maps are also available online via Geoscience Australia's award-winning MapConnect service. They are also available on DVD ROM from Geoscience Australia's Sales Centre.



For more information

phone Freecall 1800 800 173
(within Australia)
or +61 2 6249 9966

email sales@ga.gov.au

Related websites

MapConnect
www.ga.gov.au/mapconnect/