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# GEOSCIENCE

## Standing Scientific Group

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### **SCAR Geodetic Control Database**

**<[www.geoscience.scar.org/geodesy/giant.htm#controldb](http://www.geoscience.scar.org/geodesy/giant.htm#controldb)>**

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## Introduction

The Geodetic Control Database project was first developed during the GIANT work program for 2000-2002 at the former Working Group on Geodesy and Geographic Information (WG-GGI) meeting in Tokyo, July 2000. At that time New Zealand was appointed as the Project Leader and during the 2 year period they were able to develop a template and seek feedback from interested parties. [New Zeland's report on progress](#) was delivered at the WG-GGI Coordinators meeting in Siena, Italy in July 2001. <[www.geoscience.scar.org/meetings/siena/geodetic.pdf](http://www.geoscience.scar.org/meetings/siena/geodetic.pdf)>

Due to funding pressures, time constraints and lack of personnel New Zealand was unable to continue with the project after this period. Based on the research and results from New Zealands work Glenn Johnstone, one of the project collaborators from Australia, then took over the project. He developed the current version of the on-line database - with a great deal of assistance from web developers at the National Mapping Division of Geoscience Australia (see Figure 1). [A progress report on the project](#) was delivered at the XXVII SCAR meeting in Shanghai in July this year. <[www.geoscience.scar.org/meetings/shanghai/geodetic\\_control.pdf](http://www.geoscience.scar.org/meetings/shanghai/geodetic_control.pdf)>

According to the 2002-2004 GIANT work plan developed in Shanghai the Geodetic Control Database project for 2002-2004 is as follows:

**Project Leader:** Australia - [Mr Glenn Johnstone](#)

**Members:** Germany, UK, USA

**Goal:** Maintain the master index for Antarctic positional control, including all levels of accuracy

**Activities:**

1. Maintain database and add in newly acquired data
2. Italy to provide further details on Northern Victoria Land points (photos, etc)
3. Collaboration with Steffen Vogt for KGI geodetic control
4. Australia (Henk Broksma & John Manning) to help develop guidelines for photo identification (collaboration from Jerry Mullins) – October 2002
5. Publish guidelines for geodetic control identification on web site

## Status of Activities

Since the XXVII SCAR meeting the Project Leader has received updated information from the British Antarctic Survey (BAS). There were 50 new points added to the British Geodetic Control layer. These were data collected from field surveys in 1998-1999, 2000-2001 and 2001-2002.

Details on activities 2, 3 and 4 are currently being sought. The web site at the University of Bologna is temporarily out of order, thus the Victorian Land North Deformation (VLNDEF) station information is currently not accessible. Prof Alessandro Capra reports

that he and his colleagues are finishing new and complete VLNDEF monographs. He will be sending these to the Project Leader shortly as well as descriptions of the bench marks.

Details on each of the layers in the database are as follows:

<b>Country</b>	<b>no. points</b>	<b>Type</b>
Argentina	27	Astronomical
Australia	131	Astronomical
Australia	83	Bench marks
Australia	403	Geodetic marks
Australia	99	Other (mapping control, etc)
Chile	3	dGPS
GAP98	44	dGPS
NZ	373	Mixture (GPS, Astro, BM)
TAMDEF	26	dGPS
United Kingdom	1542	Mixture (trig, GPS, dGPS)
Victoria Land	19	dGPS

## **How the database works**

The database utilises 'Mapserver' freeware (ie. open source code) developed by the University of Minnesota. The software is Open GIS Consortium-compliant and MapServer "is not a full-featured GIS system, nor does it aspire to be. It does, however, provide enough core functionality to support a wide variety of web applications. Beyond browsing GIS data, MapServer allows you create "geographic image maps", that is, maps that can direct users to content." Documentation on Mapserver and the source code can be found at <<http://mapserver.gis.umn.edu/>>.

## **Database Coordinates**

The coordinates in the database shown are to the nearest 0.01 of a second, equivalent to about 10 centimetres on the ground. A number of stations shown will have coordinates calculated to a higher resolution (millimetres) which can be obtained from the custodian country. There are a few countries that have their own online database and where this happens the Geodetic Control Database provides a hyperlink to the record in that database (see Figures 2 and 3).

## **Future Activities**

The Project Leader will be seeking:

- a) further details on Northern Victoria Land points
- b) further geodetic control information from GSSG members who currently have not contributed data to the database
- c) assistance from GSSG members in the formulation of guidelines for photo identification





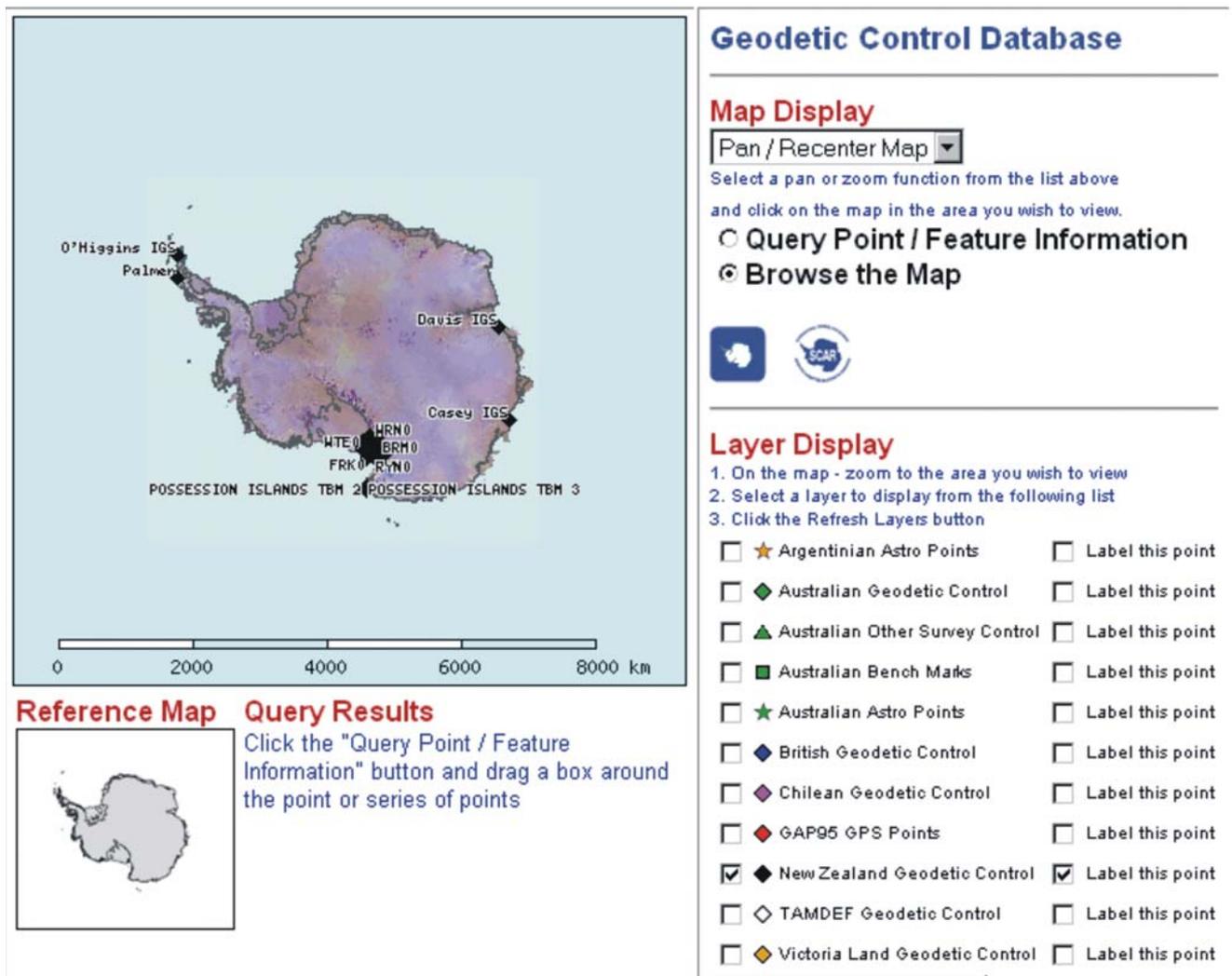
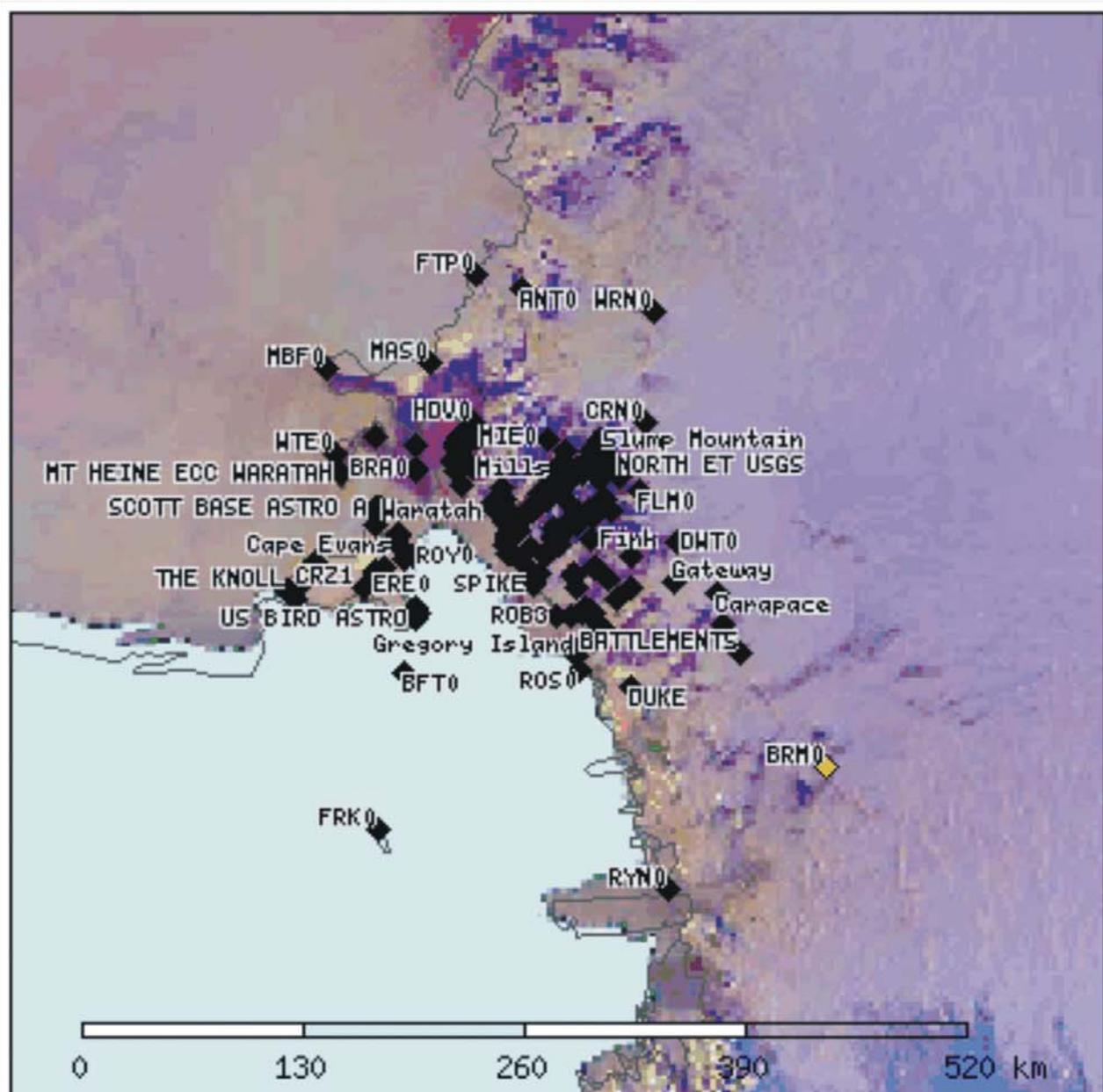


Figure 1: Geodetic Control Database showing New Zealand control points



### Reference Map



### Query Results

**Name:** BRM0

**Code:** DDKM

**Datum:** RSRGD2000

**Web Link:** [Station Summary](#)

**Latitude:** S 75d 48m 0.91s

**Longitude:** E 158d 28m 7.63s

Figure 2: Close up of New Zealand control points

