

Metadata Details

Title

Gravity Survey (Helicopter Supported) between Schirmacher Oasis and Wohlthat Mountains, Dronning Maud Land, Antarctica.

Science Keywords

Category	Land Surface
Topic	Geomorphology
Expedition Year	1989-1990
ISO Topic	Geodesy

Summary

Abstract

The helicopter-borne magnetic survey conducted between the Schirmacher Oasis (SO) and the Wohlthat Mountains (WM) during the Seventh Indian Antarctic Expedition (IAE) revealed a number of interesting anomaly zones in the region. To study some of these features in detail, a helicopter supported gravity survey was conducted during the Ninth IAE. Details of the logistics planning, data acquisition, processing and interpretation relating to this survey are described.

Purpose

The need to conduct gravity survey around SO and in the region between SO and WM was realized when a number of interesting features were revealed by the helicopter-borne magnetic survey done during the seventh IAE. While the nunataks between the SO and WM showed high magnetic anomalies, the SO was found to be associated with a magnetic low (Fig. 1). Also a strong magnetic high was observed just northwest of SO. In order to further study this strong magnetic anomaly of more than 600 nT associated with the SO, a gravity survey was carried out during the Ninth IAE and measurements were taken along 4 profiles in the vicinity of SO. One of these profiles was extended upto Humboldt mountains while another (fifth profile) was taken between the eastern margin of SO and the foot-hills of the Gruber massif. After the standard data reduction and processing, the observed gravity values were interpreted considering available geological and geophysical information in the region.

Data Center