

Metadata Details

Title

Magnetic Survey Over the Ice-shelf Around the Indian Permanent Station in Antarctica.

Science Keywords

Category	Land Surface
Topic	Geomorphology
Expedition Year	1984-1985
ISO Topic	Geodesy

Summary

Abstract

The results presented here relate to the magnetic investigations carried out around the Indian permanent station on the ice-shelf during the Fourth Indian Antarctic Expedition. Magnetic measurements were made along a 33 km long N-S traverse starting right from the northern edge of shelf to the region where deep water channels were encountered. The observed profile was interpreted using a number of geophysical methods. Utilizing the magnetic data obtained in earlier surveys it has been possible to delineate sub-shelf trends in the graben or rift-zone like structure of the basement. This structural pattern is supported by the marine seismic and magnetic work carried out in Lazarev sea during the first Indian expedition and by the geological studies hypothesizing the existence of extensive grabens.

Purpose

The magnetic study under the Indian Antarctic research programme was initiated during the second expedition and the results of this survey, covering seven profiles and a total of 65 line km, over the ice shelf north of the Runway Hut (70°02'00"S, 12°00'00"E), are presented by Mittal and Mishra (1985). They observed a consistent magnetic anomaly of the order of 180-200 nT approximately 5-6 km south of the coast which they ascribed to a 3 km wide source lying at a depth of 2.5 km. The source, magnetised with a feeble intensity of 80-100 nT, could either be a metamorphosed basic intrusion extending deep into the crust or a depression in the bedrock.

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