

Metadata Details

Title

Magnetometrics in the Study of Sub-surface Structures of Antarctica Margin.

Science Keywords

Category	Solid Earth
Topic	Geomagnetism
Expedition Year	1982-1983
ISO Topic	Geodesy

Summary

Abstract

During the second Indian Antarctica expedition in addition to monitoring time variation in the geomagnetic field components a preliminary ground based magnetic survey was conducted. Magneto metric data obtained along six 10 -15 km long profiles, after correction for transient and day- day variability are examined in the form of magnetic profiles and anomaly contour map . Qualitative interpretation of data suggests the presence of a north- south trending rift structure on the topographic ridge between 10- 12 E. The structure appears to be northward continuation of rift valley mapped on the continental margin of the Princes Astrid coast. The rift structure appears to terminate against a sharp discontinuity.

Purpose

The study of continental margin has received the attention of several workers in the past two decades. It is well recognised that in geological sense the coastal line is not the true boundary between continent and ocean. The rocks and structures seen on land extend under the sea and hence the real boundary between the continent and ocean must be looked for far out to sea. The average equality of free-air gravity anomalies over both oceans and continents, established in the beginning of century, suggested an isostatic balance between continents and ocean basins with either a shallower depth to Moho and /or denser crust and upper mantle beneath the ocean basins. Subsequent seismic and gravity modelling have confirmed that the crust-mantle boundary rose from 30-35 km depth beneath the continent to a depth of 10 km beneath the ocean basins over a transition zone of approximately 200 km wide.

Data Center