1. Record Nr. UNINA9910830575203321

Titolo	Contributions to Antarctic Research IV
Pubbl/distr/stampa	[Place of publication not identified], : American Geophysical Union, 1995
ISBN	1-118-66820-0
Descrizione fisica	1 online resource (216 pages) : illustrations
Collana	Antarctic research series ; ; 67
Disciplina	559.89
Soggetti	Geology - Antarctica Antarctica Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Sommario/riassunto	Published by the American Geophysical Union as part of the Antarctic Research Series, Volume 67.A high amplitude magnetic anomaly occurs over the Butcher Ridge igneous complex in the Transantarctic Mountains. This sill-like body is approximately 10 km long where exposed. It ranges from basalt to rhyolite in composition and has been suggested as evidence of a large mafic intrusion at depth. A single NW-SE aeromagnetic profile flown across Butcher Ridge gave an 8-km-wide positive anomaly with maxima of about 700 and 1000 nT which are associated with topographic peaks that the aircraft cleared at about 300 and 600 m respectively. The observed amplitude of the Butcher Ridge anomaly is too great to be caused by a typical sill of Ferrar Dolerite, examples of which are widely exposed along the Transantarctic Mountains. Models that fit the observed data indicate magnetizations comparable to the Jurassic Dufek layered mafic intrusion in the Transantarctic Mountains near the Weddell Sea. Model calculations show that the upper, and most magnetic part of the inferred intrusion must be greater than about 2 km thick and that the entire intrusion is probably substantially thicker. We interpret the source of the Butcher Ridge magnetic anomaly to be a layered mafic intrusion, syntectonic with the Jurassic Transantarctic (failed) rift, marked by the Ferrar Dolerite. The magnetic evidence for a buried

mafic body beneath the Butcher Ridge igneous complex is the first evidence of possible Jurassic cumulate rocks in the Transantarctic Mountains bordering the Ross Embayment-Byrd Subglacial Basin.