

Gravity Modelling of the Liscomb "Satellite" Pluton

Mitchell Brogan

Department of Geology, Dalhousie University, Halifax, Nova Scotia B3J 3H4

The Liscomb "Satellite" Pluton is a small granitoid mass located 3 km northwest of the main Liscomb Complex in Central Nova Scotia. Detailed gravity data have been obtained over the smaller pluton, and from the surrounding area. Due to the density contrast that normally exists between intrusive bodies and their metamorphosed hosts it is possible to model the subsurface geometry of the intrusive body using Bouguer gravity data.

During this study 96 gravity stations were surveyed over 22 km with an average station spacing of 200 m. Over approximately 22 km of the survey gravity data were collected on a regional scale at a station spacing of 200 to 1000 m. Approximately 11 km of the survey was conducted on, or in the immediate

vicinity, of the Liscomb "Satellite" Pluton using a station spacing of 100 to 200 m. For most of the survey the error in elevations is ± 5 mm. The error in the gravity data due to the gravimeter is on the order of ± 0.05 mgal. A conservative estimate of the error in the Bouguer gravity data is ± 0.1 mgal.

Bouguer gravity contours show a -1.2 to -1.4 mgal anomaly over the Liscomb "Satellite" Pluton. Preliminary gravity modelling suggest a bowl-shaped cross-section for the Liscomb "Satellite" Pluton. Gravity modelling results indicate that the Liscomb "Satellite" is not connected to the larger Liscomb Complex to at least a depth of 1.0 km.