

## Old and new gravity reference stations in St. John's, Newfoundland, Canada

JILLIAN THISTLE AND ALISON LEITCH

*Department of Earth Sciences, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador A1B 3X5,*

*Canada <[j.thistle@mun.ca](mailto:j.thistle@mun.ca)>*

The Canadian Gravity Standardized Network (CGSN) is a series of absolute gravity reference stations maintained by Natural Resources Canada. Incorporating one of these stations into a gravity survey allows relative gravity measurements to be converted to absolute gravity. On the island of Newfoundland there are 2 primary stations and 82 secondary stations which are all tied to a primary station. In the St. John's area there are 18 stations located around the harbor. The first part of this study was conducted to determine which of the 18 stations are still accessible. It turns out that all of the stations are either built over, on private property, or behind security fences. The second part of this study was to set up new replacement gravity stations for the convenience of researchers. Three locations were chosen: outside the Johnson Geo Center on Signal Hill; indoors in the lower level of the Johnson Geo Centre; and next to the statue of Terry Fox outside of the St. John's Port Authority building. These stations were chosen because they are in flat, stable areas sheltered from the wind, they are easy to find and access, and they are not likely to be built over or changed in the foreseeable future. These stations were then tied into a fourth station located in the basement of the Earth Sciences building at Memorial University. This fourth station was in turn tied into the only primary station in the area, which is inconveniently located in a locked vault in the basement of the Science building at Memorial University, and therefore difficult to access.