

Axel Heiberg Island: Selected References on Glaciology

Trent Technical Note 1999-2

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INTRODUCTION

This bibliography is a partial update to late 1999 of the exhaustive bibliography compiled by Ommanney (1987). It focusses on glaciological research which has been conducted (principally but not exclusively) in the Expedition Fiord area of the island. A few of the references are to papers which address issues of wider scale relying in part on measurements made on Axel Heiberg Island. Some older references of particular interest or importance are included in the light of possible impending surveys of the ice cover of Axel Heiberg Island by laser altimetry and radio echo sounding.

Estimates of ice thickness are given by Becker (1963a), Koerner (1977) and Redpath (1965) for profiles on White and Thompson Glaciers; Koerner also has thicknesses for Müller Ice Cap. Ground control in the Expedition Fiord area is very good (Haumann 1961, 1963). The map which makes best use of this control is at a scale of 1:50,000 (National Research Council 1962a). Several large-scale maps of glacier terminuses and small glaciers were also published by the National Research Council. There is a 1:100,000 map covering a greater area (McGill University 1963), including a substantial part of Müller Ice Cap, but outside the region of the 1:50,000 map the geodetic control is loose to non-existent. All of Axel Heiberg Island is mapped at 1:250,000 and 1:1,000,000 on sheets of the National Topographic Survey. These topographic maps show glacierization at the time, 1958-1959, of the first complete coverage by vertical photography.

Photographic coverage is described by Ommanney (1969a,b) and Cogley and Adams (1999a). The reports by Ommanney, and also Dunbar and Greenaway (1956), have abundant samples of the early oblique photography of Axel Heiberg Island flown between 1947 and 1953. Several Landsat-1 images covering large parts of the island are available, but most of the later Landsat satellites did not have orbits sufficiently highly inclined to reach so far north. Radarsat coverage is also available. Axel Heiberg Island has been assigned High priority in the GLIMS targetting programme. GLIMS, Global Land Ice Measurements from Space, is a project coordinated by the U.S. Geological Survey and is intended to monitor the world's glaciers using the ASTER radiometer on board the EOS Terra satellite. This Earth Observing System satellite is at present scheduled for launch no earlier than November 1999.

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