



Limited post-LGM thinning of the Slessor Glacier, Weddell Sea embayment, Antarctica

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We present the first results of a study aimed at determining ice elevation changes in the Shackleton Range, Antarctica. The Shackleton Range fronts the Filchner Ice Shelf in the Weddell Sea embayment, and is bounded on either flank by the Slessor and Recovery glaciers, which drain the East Antarctic Ice Sheet and contribute about one third of total inflow to the Filchner-Ronne Ice Shelf. The behaviour of these major ice streams during and following the Last Glacial Maximum is uncertain, with current estimates of maximum ice thickening that differ by over 650 meters. Previous quantitative data support an interpretation of limited thickening during the Last Glacial Maximum based on cosmogenic-nuclide surface exposure ages from bedrock surfaces that suggest the mountain summits have remained exposed for millions of years. Here we present new surface exposure ages from erratics deposited by the Slessor Glacier on ridges and moraines that flank the Shackleton Range. These data lead us to infer that the Slessor Glacier did not thicken appreciably during the Last Glacial Maximum. Perhaps this is related to the over-deepened Thiel Trough beneath the Filchner Ice Shelf.