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Supplementary Materials for

Discovery of a hypersaline subglacial lake complex beneath Devon Ice Cap, Canadian Arctic

Anja Rutishauser, Donald D. Blankenship, Martin Sharp, Mark L. Skidmore, Jamin S. Greenbaum, Cyril Grima, Dustin M. Schroeder, Julian A. Dowdeswell, Duncan A. Young

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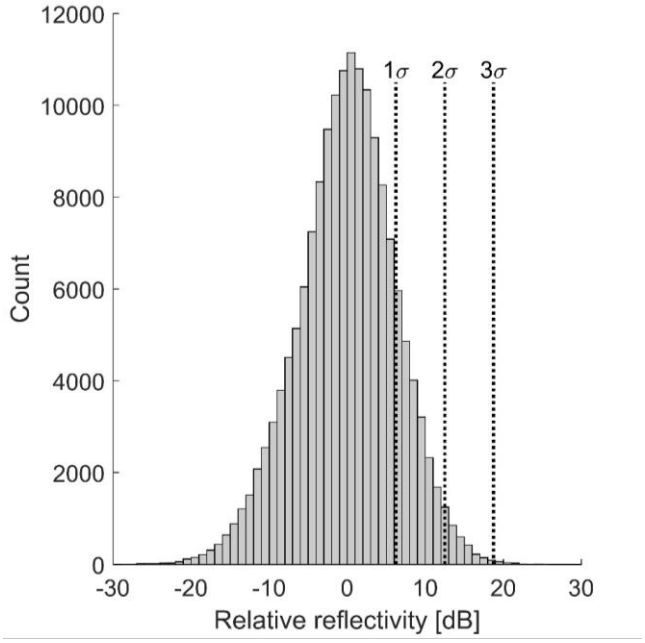

fig. S1. Histogram of all recorded basal reflectivity values on DIC. Corrections for geometrical spreading losses and attenuation are applied. Dashed lines represent the values of one, two and three standard deviation σ. The observed reflectivity anomalies over T1 and T2 (10-15 dB) are 1.6-2.4 standard deviations above the mean of all bed reflectivities measured on DIC.

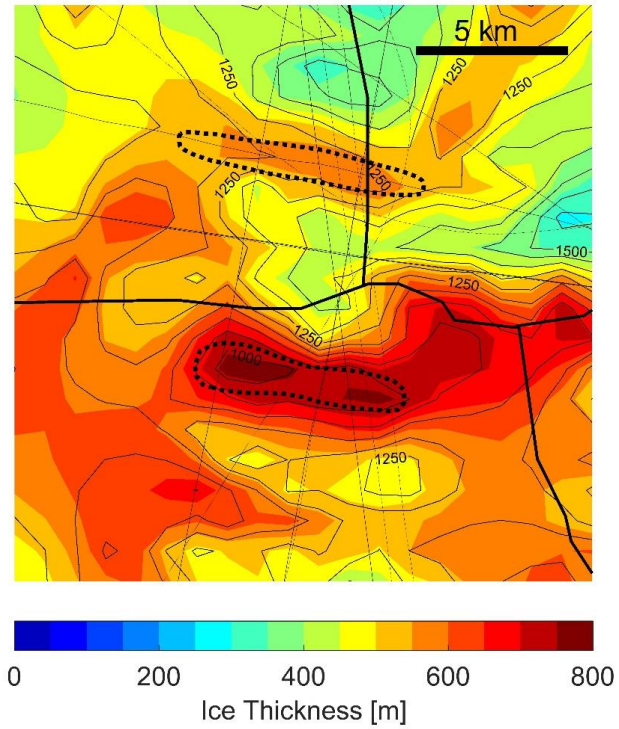

fig. S2. Interpolated ice thickness near the DIC summit area. The ice thickness is overlain on bedrock elevation contours [m asl.]. Fine black lines indicate the location of the radar transects, whereas the thick black lines represent the ice divides. The locations of the subglacial lakes are indicated with dotted lines.

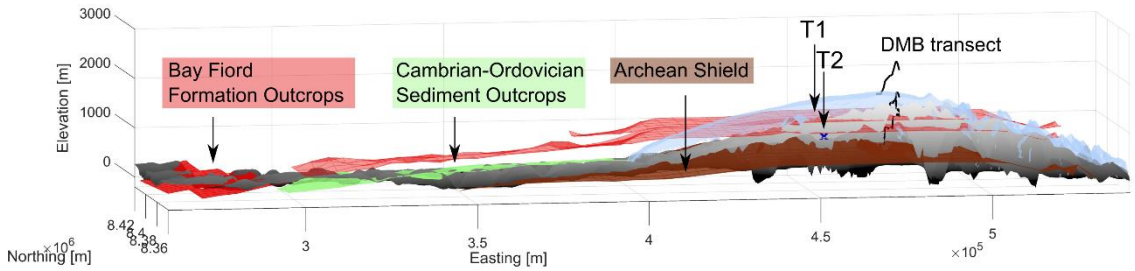

fig. S3. 3D geology model. Three-dimensional reconstruction of the bedrock topography (greyscale) and ice surface (blue) of DIC and the geological formations as interpolated from the published geology (*28*) into our geology model. Outcrops of the Bay Fiord Formation (red) and Cambrian-Ordovician sediments (green) are observed to the west of DIC, underlain by the Archean Shield. Interpolation of these outcrops reveals that the geological formations are dipping upwards and towards DIC, with the Bay Fiord Formation intersecting the bedrock in the vicinity of T1 and T2. The location of the transect used to derive the magnetics depth to basement (DMB) is shown in black.

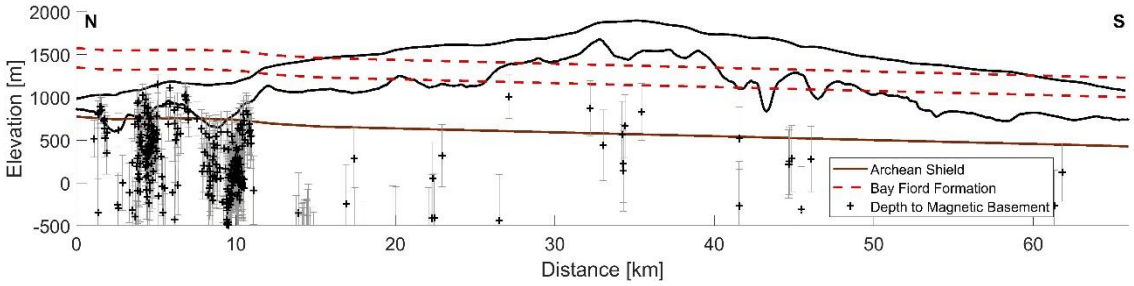

fig. S4. Comparison of modeled geology and DMB solutions. The top of the Archean shield (basement, brown solid line) is compared to the depth to magnetic basement (DMB) solutions (black crosses) derived from airborne magnetics data recorded along a transect east of the subglacial lakes (fig. S3). The black lines represent the ice surface and bedrock topography. The error bars of the DMB solutions represent a 20 % uncertainty of the distance between the source and sensor.