Supporting Information for "Bathymetry of Southeast Greenland using Ocean Melting Greenland (OMG) data"

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1. Figures S1 to S5

References

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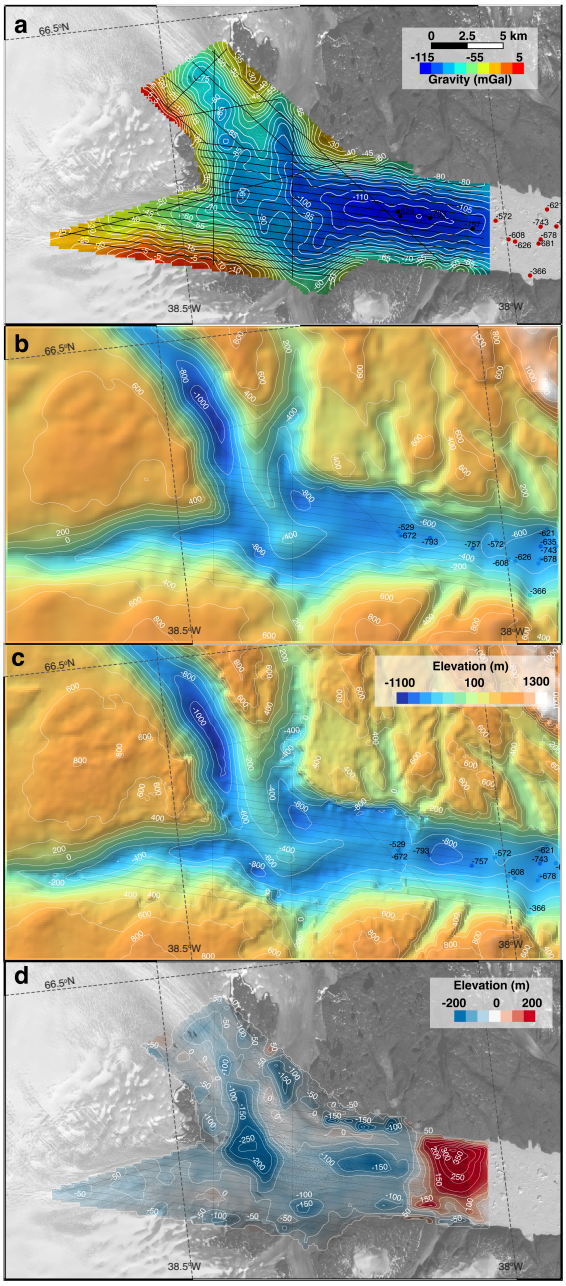

Figure S1. Box F in Figure 1 (**a**) GBMF gravity survey lines on Helheim Gletscher, and free-air gravity anomalies in mGal (1 mGal=10^{-5} m/s^2) are color coded from blue (-115 mGal) to red (+5 mGal) with 10 mGal white contours for OMG gravity. (**b**) Final bed elevation with GBMF gravity data. Elevation contours (white) every 200 m. (**c**) Bed elevation from BMv3 (Morlighem et al., 2017). (**d**) Elevation difference between gravity inversion bed and BMv3. Elevation contours (white) every 50 m.

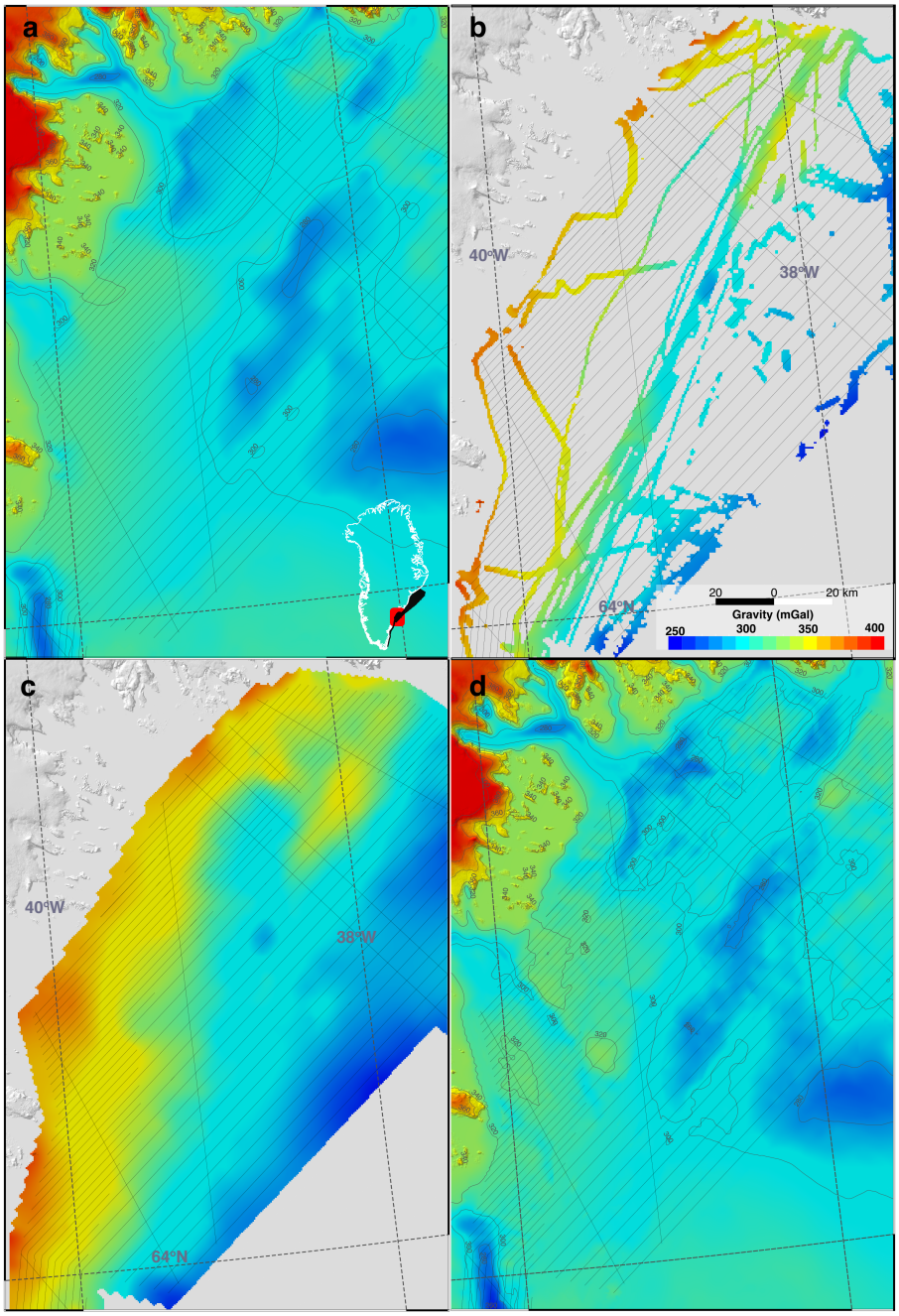

Figure S2. (**a**) The forward model gravity field of block C using the BMv3 solution. (**b**) DC shift calculated by differencing the forward model with observations where we have MBES data. (**c**) Interpolated DC shift over the entire area using a minimum curvature algorithm. (**d**) Input gravity to the inversion model after the DC shift is added to the observations. All grids overlaid on a shaded relief of the 90 m resolution of the Greenland Ice Mapping Project (GIMP) DEM.

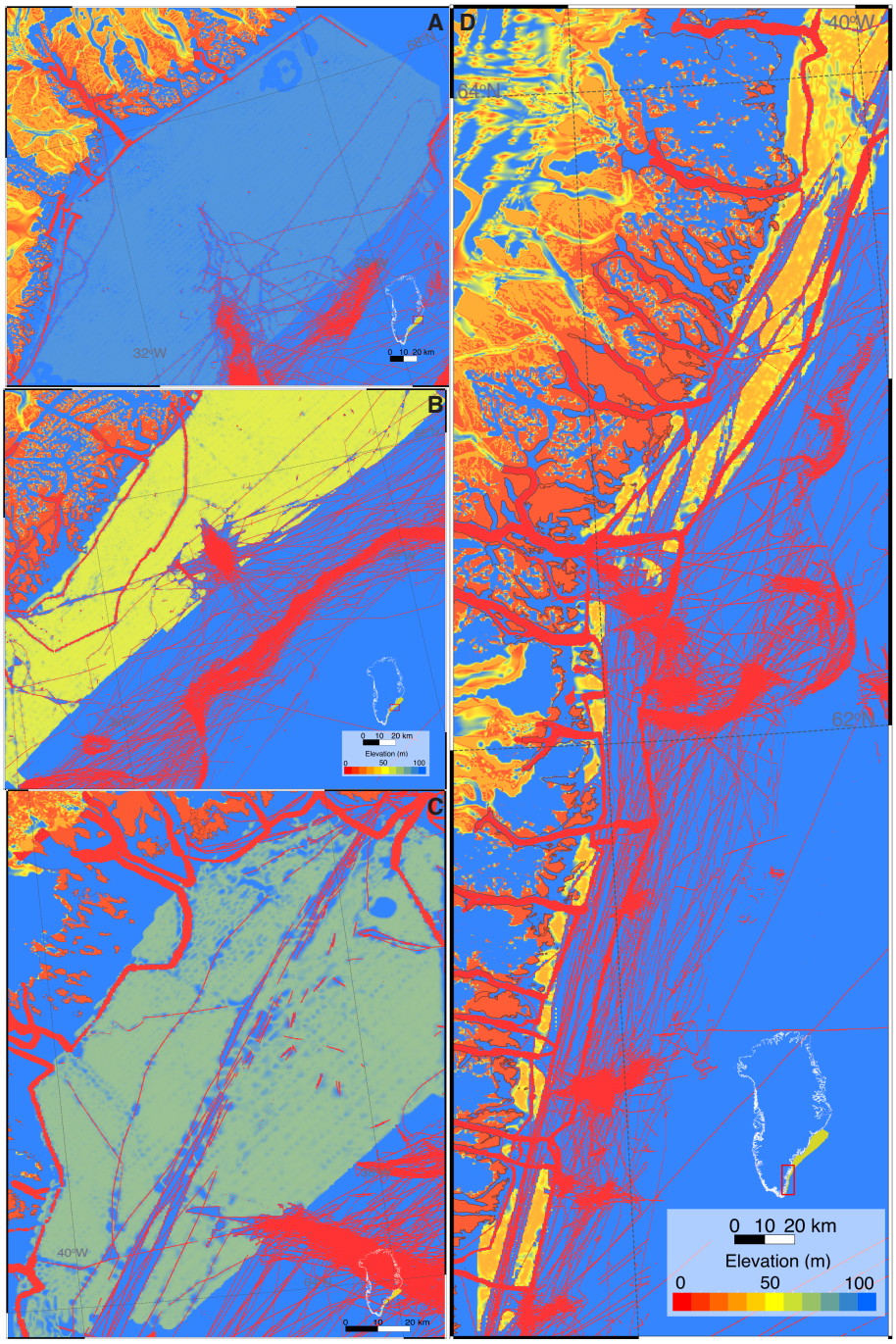

Figure S3. Gravity inversion misfit from mGal to meters in Southeast Greenland with panels corresponding to sub-regions A-D of the inversion domain in Figure 1. Error in bed levation is color-coded from red (0 m) to blue (100 m).

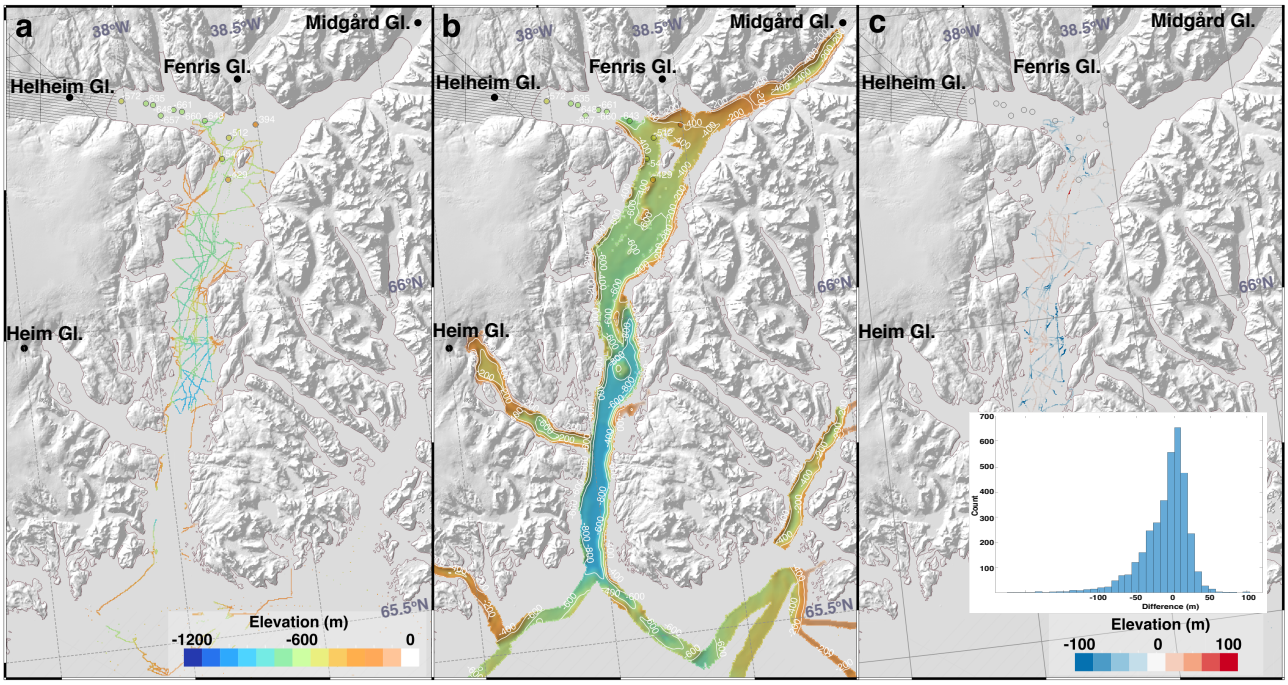

Figure S4. (**a**) Single beam bathymetry data in Sermilik Fjord from Fiamma Straneo (Morlighem et al., 2017). (**b**) Multi-beam bathymetry data collected by OMG project through 2015 to 2018. Elevation contours (white) every 200 m. (**c**) Bathymetry difference between multibeam and single-beam bathymetry. Brown lines are the ice-ocean boundary. Inset is the histogram of the difference. All grids overlaid on a shaded relief of the 90 m resolution of the Greenland Ice Mapping Project (GIMP) DEM.

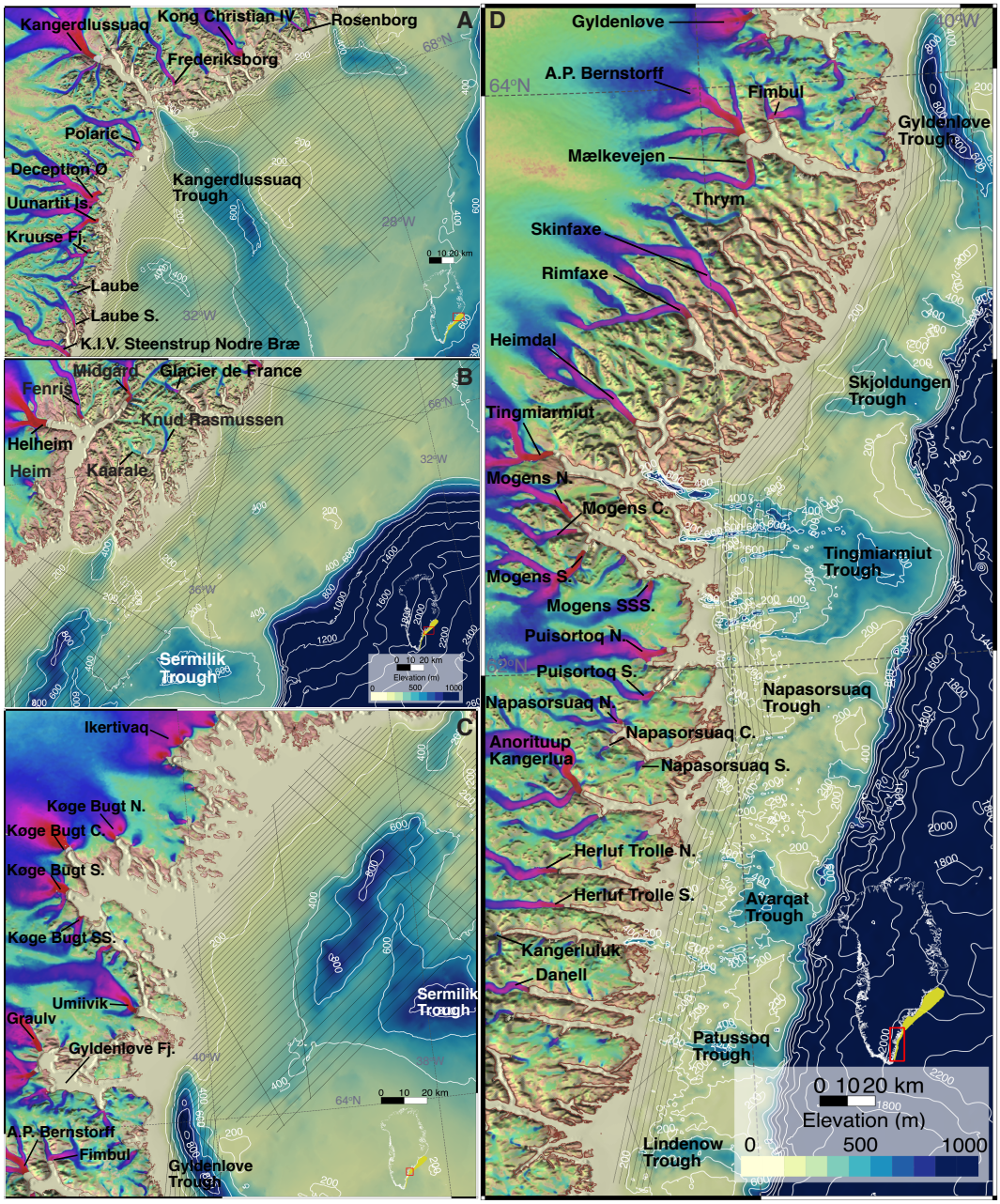

Figure S5. Bathymetry in Southeast Greenland from IBCAO Ver. 3.0 (Jakobsson et al., 2012), with panels corresponding to sub-regions A-D of the inversion domain in Figure 1. Bed elevation is color-coded from white (0 m) to blue (1000 m) above mean sea level with 200-m contours and labels every 400 m. The ice-ocean boundary is brown. Major glaciers and troughs on the seafloor are named. Black thin lines are survey lines from gravity.