

Figure S1. Scaling of bed geometry and maps of data involved in the response-time calculation of MacAyeal Ice Stream (analogous to Fig. 2).



**Figure S2.** Scaling of bed geometry and maps of data involved in the response-time calculation of Bindschadler Ice Stream (analogous to Fig. 2).



Figure S3. Scaling of bed geometry and maps of data involved in the response-time calculation of Mercer Ice Stream (analogous to Fig. 2).



**Figure S4.** Scaling of bed geometry and maps of data involved in the response-time calculation of Wilkes Subglacial Basin (analogous to Fig. 2).



Figure S5. Scaling of bed geometry and maps of data involved in the response-time calculation of Totten Glacier (analogous to Fig. 2).



Figure S6. Scaling of bed geometry and maps of data involved in the response-time calculation of East Lambert Rift (analogous to Fig. 2).



Figure S7. Scaling of bed geometry and maps of data involved in the response-time calculation of Support Force Glacier (analogous to Fig. 2).



Figure S8. Scaling of bed geometry and maps of data involved in the response-time calculation of Foundation Ice Stream (analogous to Fig. 2).



Figure S9. Scaling of bed geometry and maps of data involved in the response-time calculation of Institute Ice Stream (analogous to Fig. 2).