Supplementary Information for

AutoTerm: A "big data" repository of glacier termini delineated using deep learning

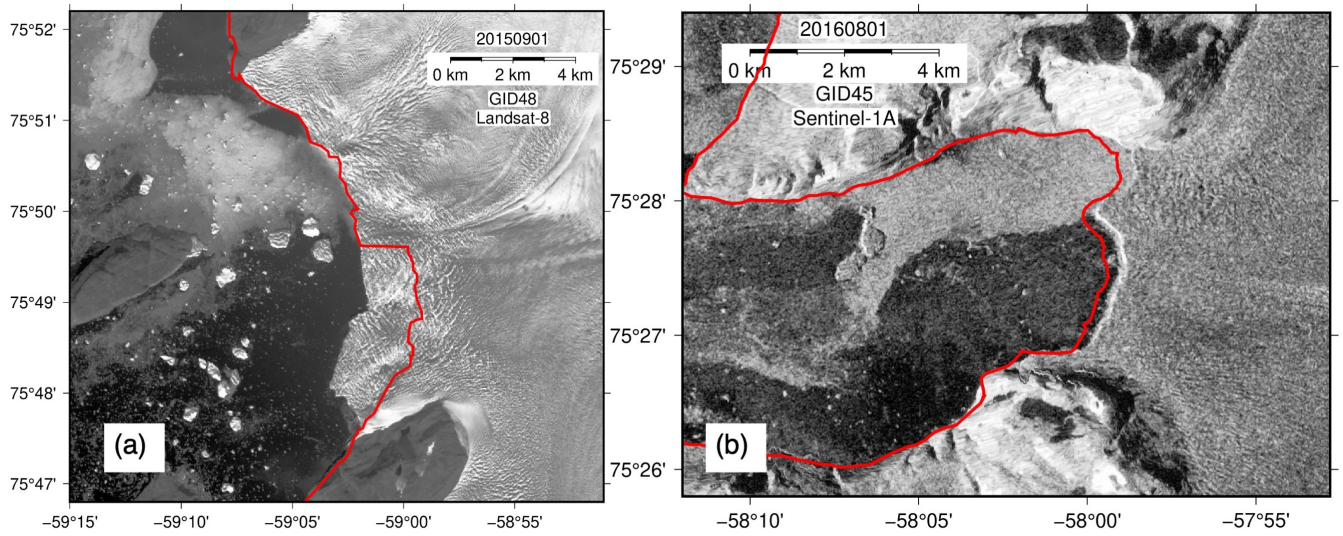

Figure S1. Examples of the TermPicks manually-delineated trace data (red) where traces are discarded because they are incorrect (a) or contain georeferencing offsets (b).

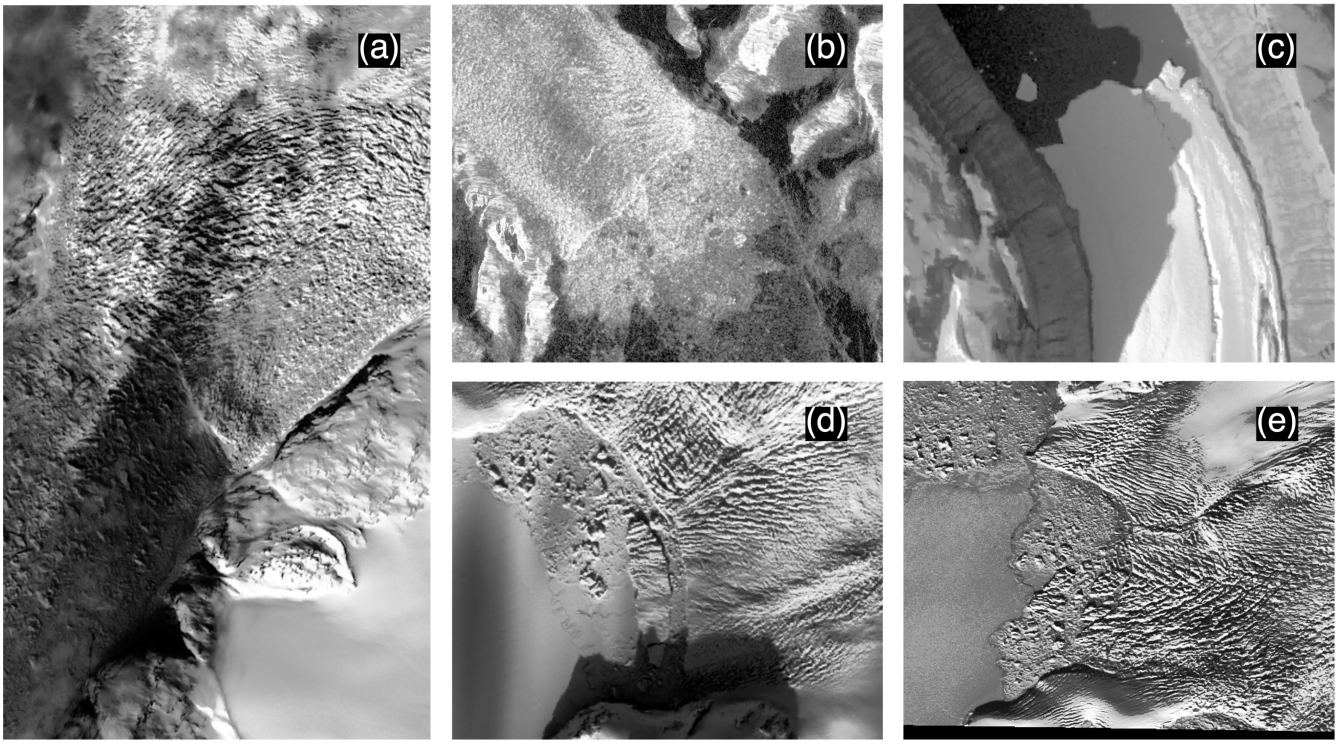

Figure S2. Examples of difficult conditions that need additional training data to increase the network's accuracy on these cases.

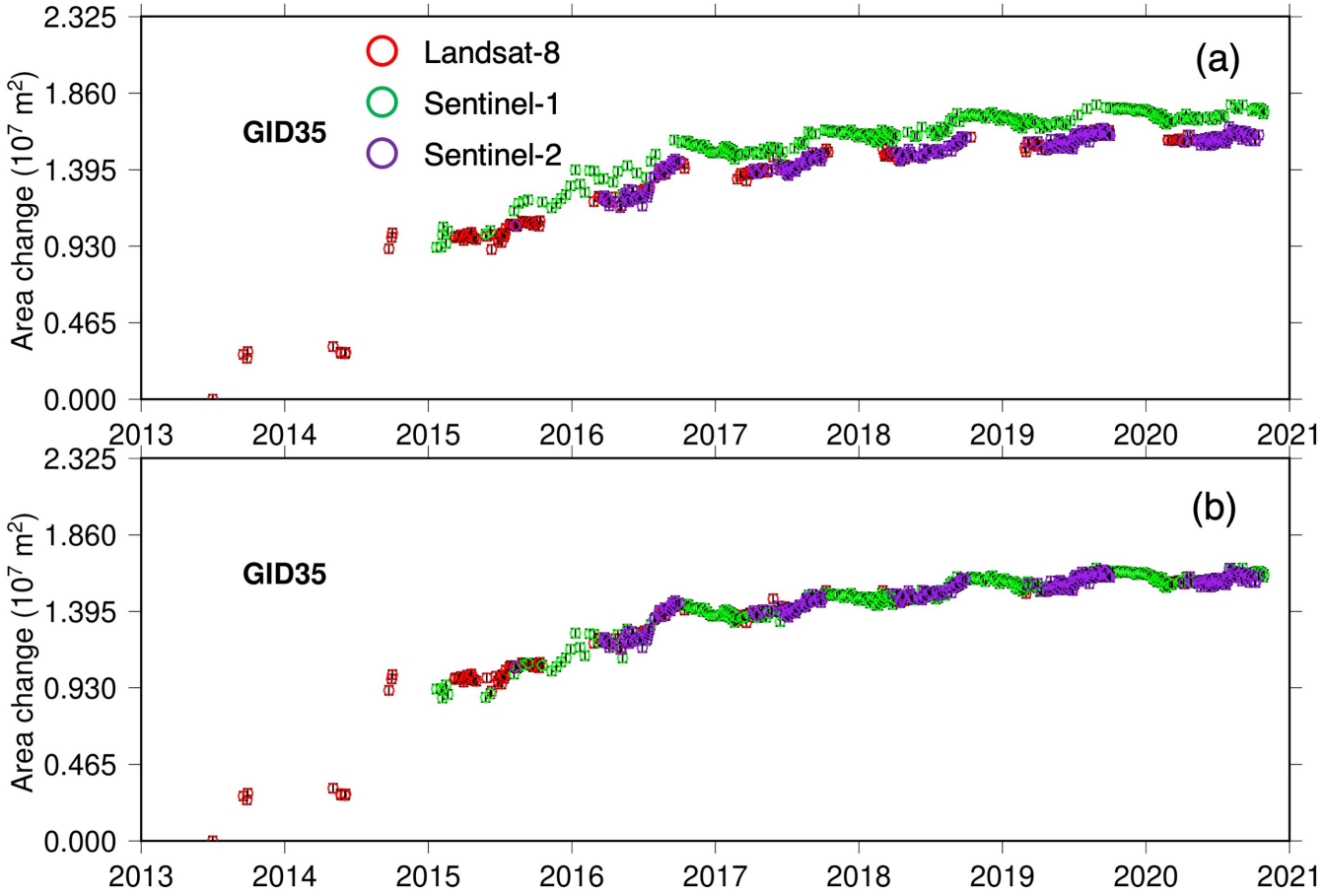

Figure S3. An example showing the results from AutoTerm before (a) and after (b) georeferencing adjustment for Sentinel-1 data.

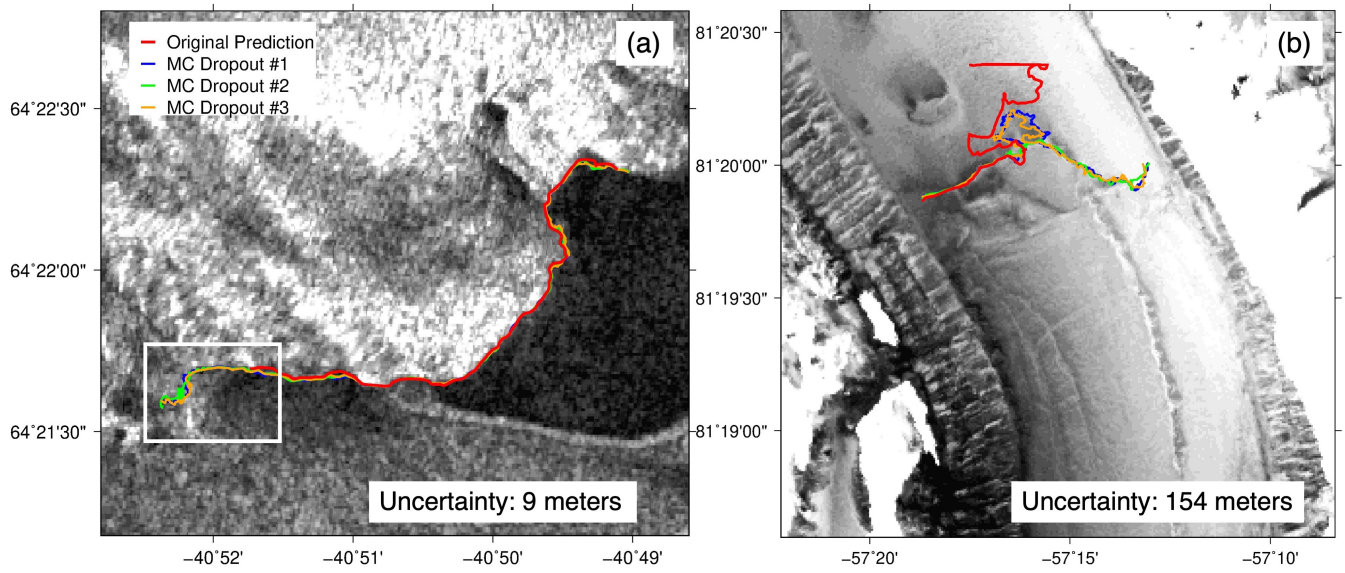

Figure S4. Examples showing the multiple terminus predictions from MC dropout and the comparison with the original prediction (red). (a) When the original prediction is of good quality, the results from MC dropout match, but contain noise. When the original prediction is of poor quality (b) the noise is amplified.

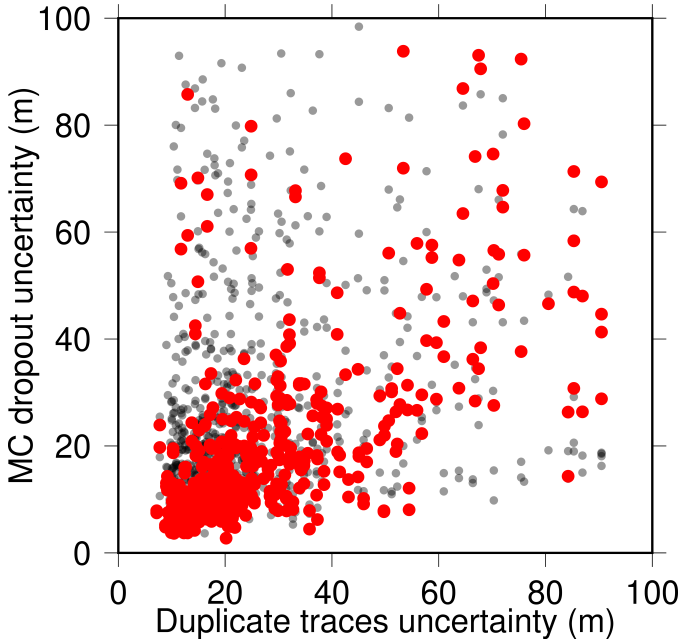

Figure S5. Comparison between duplicate trace uncertainty and MC dropout uncertainty. The linear relationship between these two measures of uncertain is more clear in Landsat-8 and Sentinel-2 since the duplicate traces are also based these two satellites (shown in red color). The linear relationship is less obvious among Landsat-5 & -7, and Sentinel-1 (black color) because the MC dropout uncertainty is influenced by each datasets characteristics.

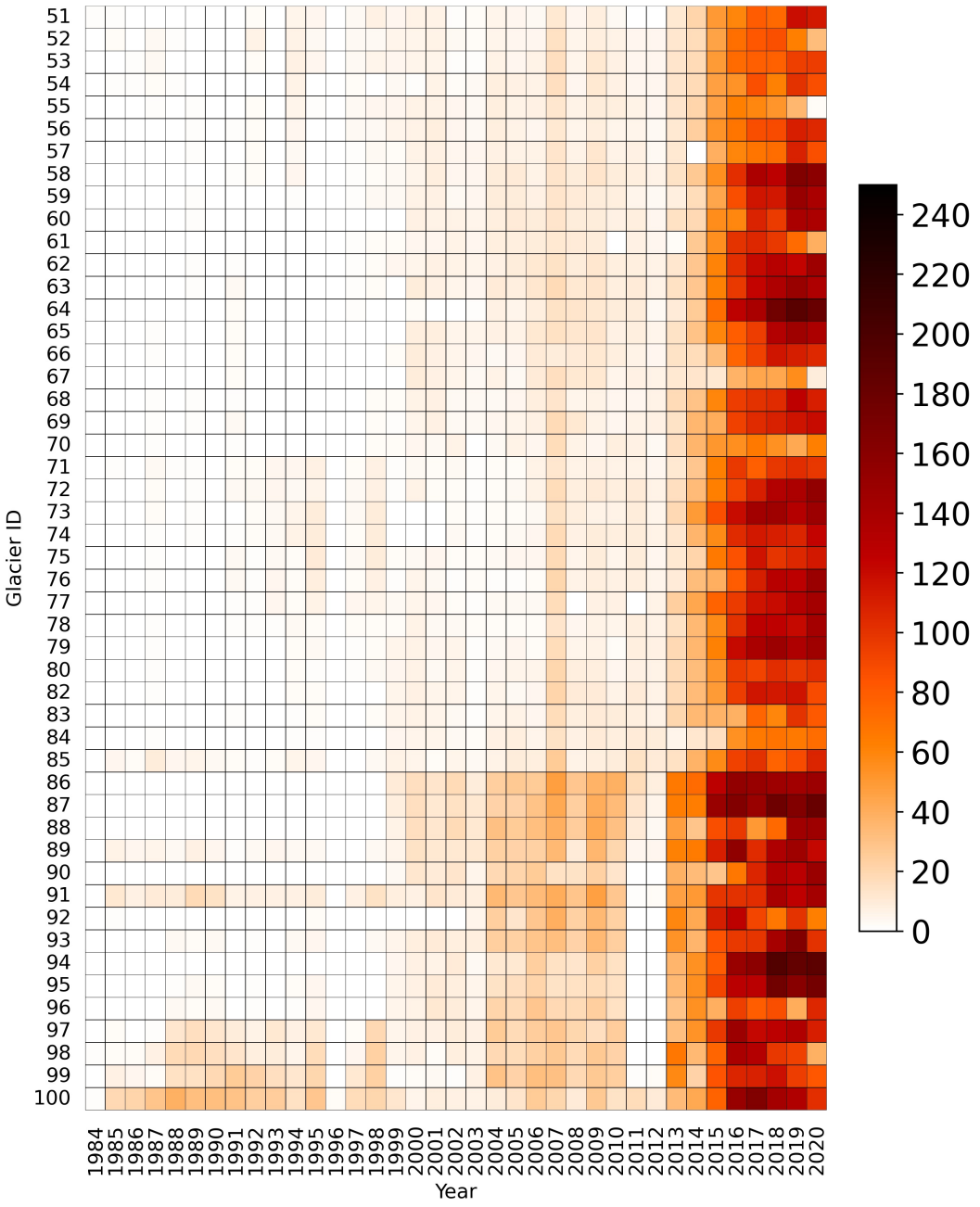

Figure S6. Heatmap of trace numbers in each year of glacier #51 to #100. Glacier #81 is not included since this glacier now converges with glacier #80. The terminus of glacier #81 will appear when the glacier retreat futher in the future.

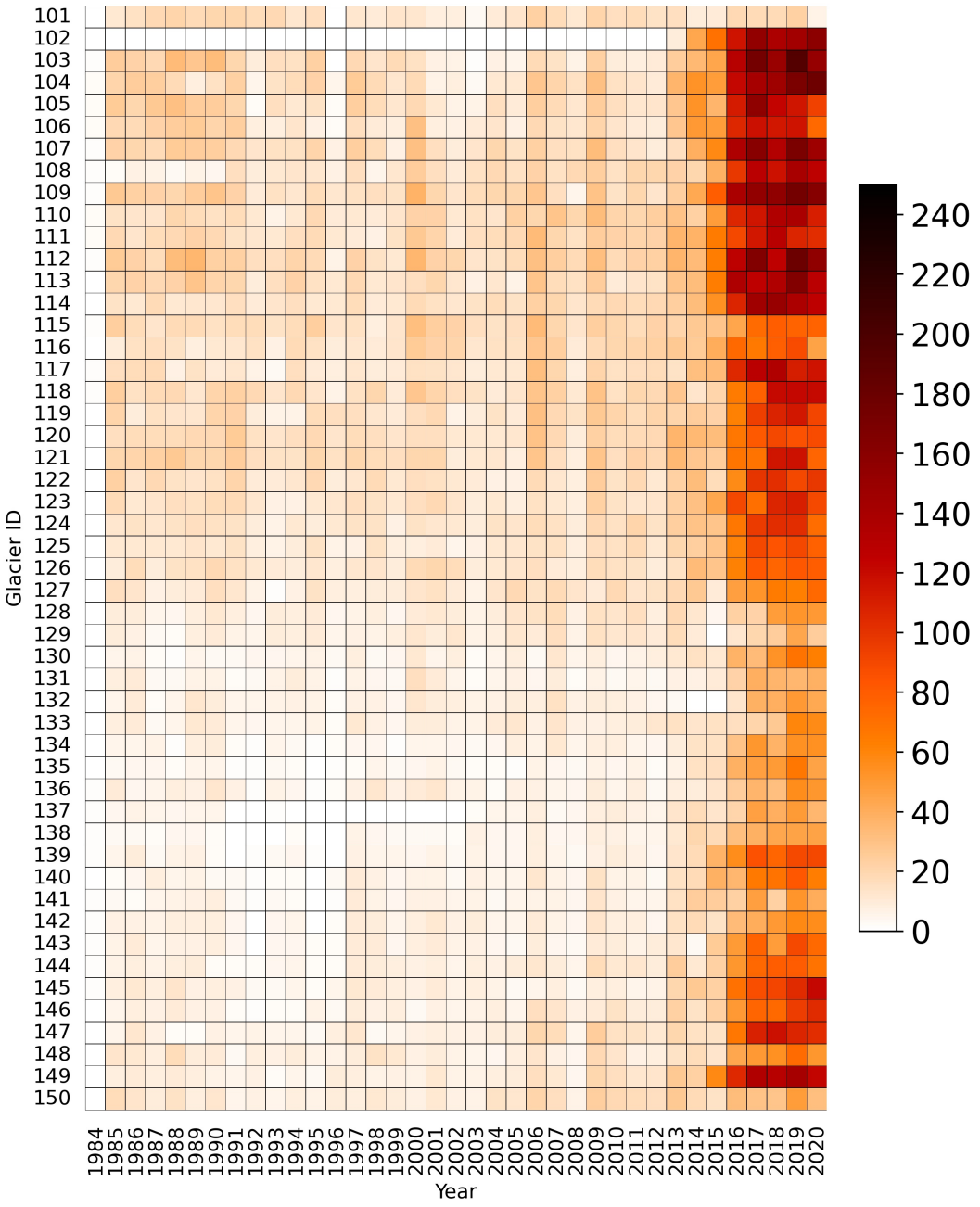

Figure S7. Heatmap of trace numbers in each year of glacier #101 to #150.

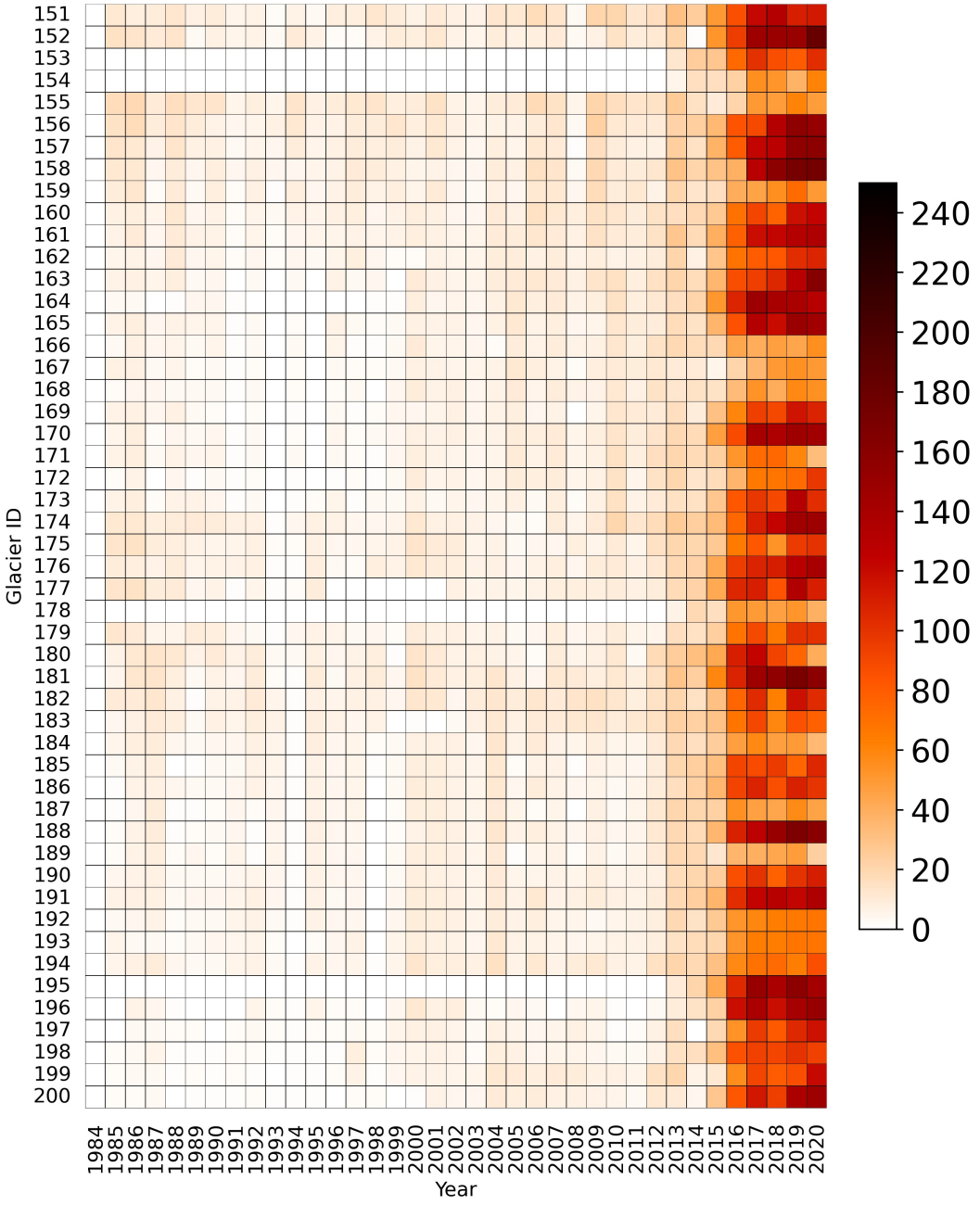

Figure S8. Heatmap of trace numbers in each year of glacier #151 to #200.

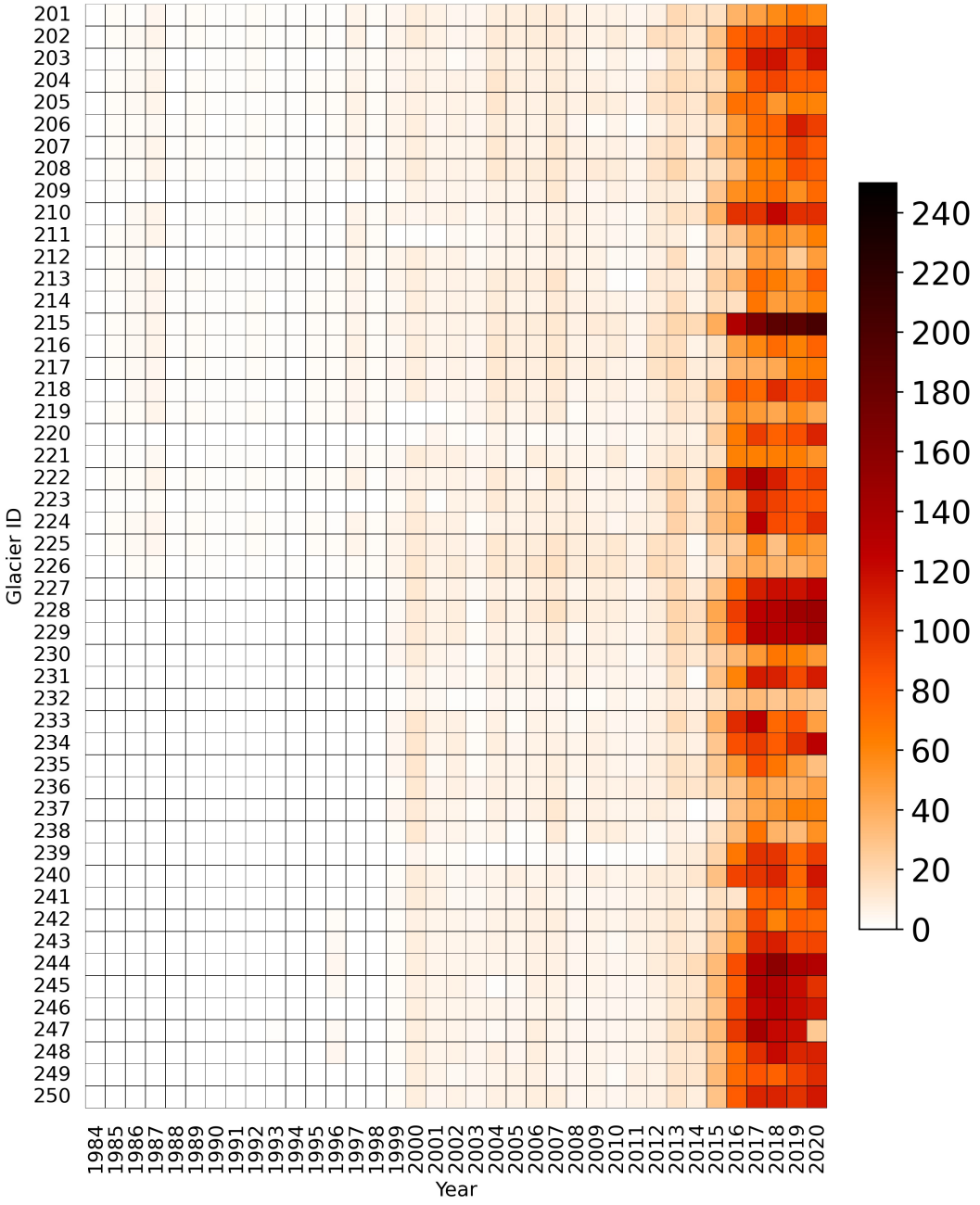

Figure S9. Heatmap of trace numbers in each year of glacier #201 to #250.

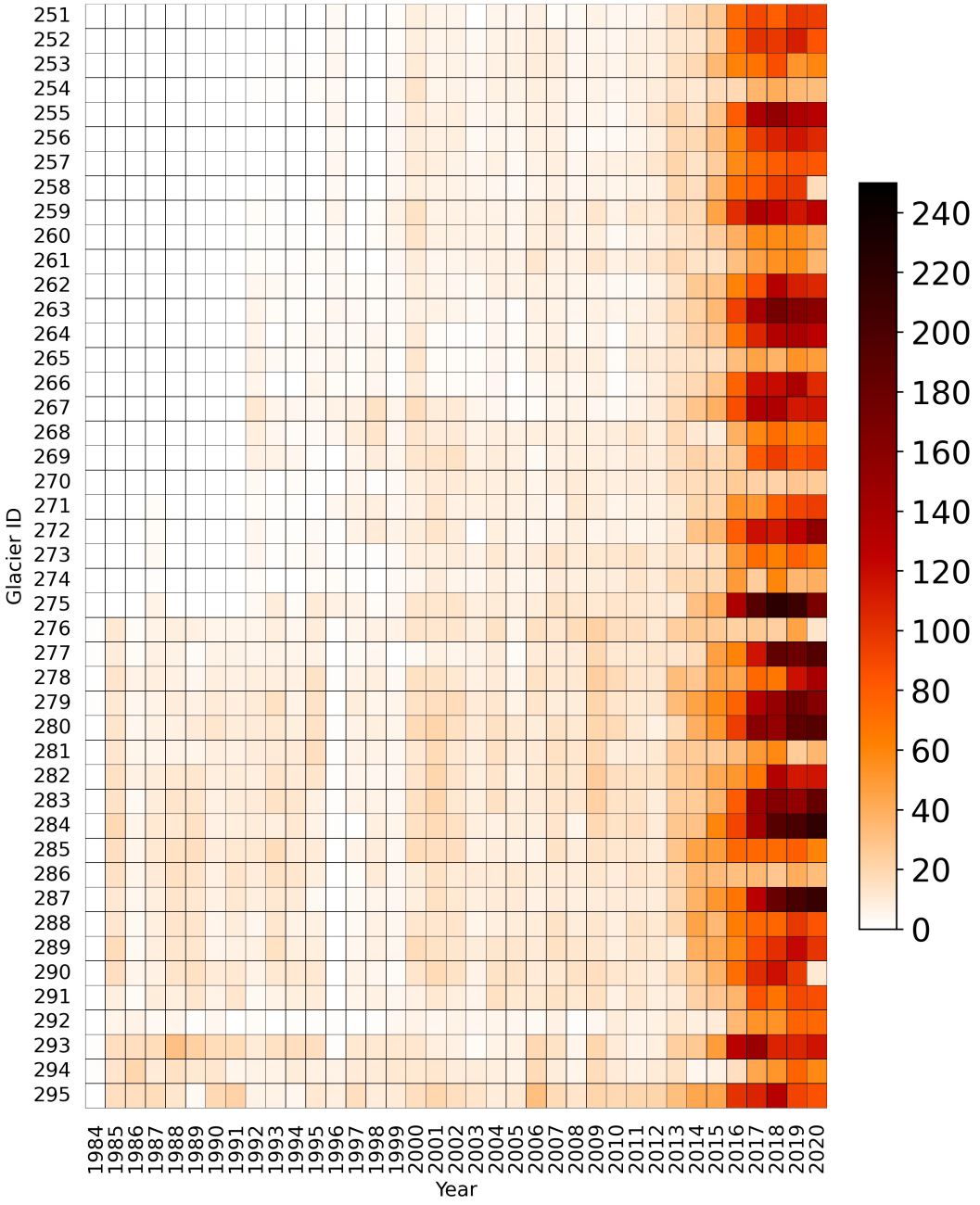

Figure S10. Heatmap of trace numbers in each year of glacier #251 to #295.