Supplementary Information for **“Silicon Isotopes in Arctic and sub-Arctic Glacial Meltwaters: The Role of the Subglacial Weathering in the Silicon Cycle”,** authored by Jade E. Hatton, Katharine R. Hendry, Jonathan R. Hawkings, Jemma, L. Wadham, Sophie Opfergelt,Tyler J. Kohler, Jacob C. Yde,Marek Stibal, and Jakub D. Žárský, published in Proceedings of the Royal Society A.

**Supplementary Table 1: Sample information for the new data presented in this study.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Glacier | Location | Latitude | Longitude | Date | Time | | Temp (°C) | Sample ID |
| Disko 6 | Qeqertarsuaq | 69.715833° | -53.441617° | 4/8/2015 | 1600 | 0.1 | | D6 |
| Disko 10 | Qeqertarsuaq | 69.766717° | -53.413400° | 6/8/2015 | 1520 | 0.1 | | D10 |
| Disko 11 | Qeqertarsuaq | 69.784050° | -53.427200° | 6/8/2015 | 1800 | 2.2 | | D11 |
| Disko 13 | Qeqertarsuaq | 69.801817° | -53.375900° | 9/8/2015 | 1700 | 0.1 | | D13 |
| Kuannersuit | Qeqertarsuaq | 69.687500° | -53.291450° | 3/8/2015 | 2030 | 0.8 | | KG |
| Nansenbreen | Svalbard | 78.353145° | 14.075243° | 2/8/2016 | 1345 | 0.9 | | Nan |
| Sefströmbreen | Svalbard | 78.719740° | 14.374894° | 4/8/2016 | 2030 | 0.8 | | Sef |
| Ebbabreen | Svalbard | 78.726805° | 16.794599° | 6/8/2016 | 1630 | 0.6 | | Ebba |
| Langjökull | Iceland | 64.496778° | -20.227667° | 15/8/2016 | 1400 | - | | Lang |
| Sólheimajökull | Iceland | 63.534833° | -19.352194° | 16/8/2016 | 1500 | - | | Sol |
| Skaftafellsjökull | Iceland | 64.028667° | -16.932667° | 17/8/2016 | 1100 | - | | Skaf |
| Eyjabakkajökull | Iceland | 64.666250° | -15.723694° | 18/8/2016 | 1500 | - | | Eyja |
| Drangajökull | Iceland | 66.117611° | -22.287750° | 20/8/2016 | 1400 | - | | Drang |
| Styggedalsbreen | Norway | 61.488306° | 7.880444° | 22/9/2016 | 1400 | 0.7 | | Sty |
| Austerdalsbreen | Norway | 61.588500° | 6.995333° | 24/9/2016 | 1400 | 0.3 | | Aus |
| Bøverbreen | Norway | 61.556694° | 8.049500° | 25/9/2016 | 1400 | 0.7 | | Bov |
| Herbert | Alaska | 58.539120° | -134.684540° | 27/6/2017 | 1230 | 0.3 | | HE |
| Mendenhall | Alaska | 58.403990° | -134.581670° | 30/6/2017 | 1030 | 3.6 | | ME |
| Lemon | Alaska | 58.364320° | -134.478740° | 29/6/2017 | 1115 | 5.3 | | LE |
| Eagle | Alaska | 58.528640° | -134.805680° | 29/6/2017 | 1400 | 3.7 | | EA |
| Watson River | Greenland | 67.007460° | -50.680240° | 12/9/2017 | 1000 | 0.3 | | Wat |

**Supplementary Table 2: Summary of hydrochemical and isotopic results from the range of glaciers presented in this study.** Area refers to the glacierised part of the catchment, rather than the total catchment area. EC = Electrical Conductivity, D:M = Divalent ion (Ca2+ +Mg2+) : Monovalent ion (K+:Na+) ratio, ASi = Amorphous silica concentration, DSi = Dissolved silicon concentration.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample | pH | EC  (µS cm-1) | D:M  (µeq) | DSi  (µmol l-1) | δ30SiDSi  (‰) | ASi  (%) | δ30SiAsi  (‰) | Area (km2) |
| D6 | 7.2 | 7.9 | 1.66 | 15.8 | 0.22 | 0.49 | -0.55 | 1.50 |
| D10 | 8.7 | 7.7 | 4.65 | 23.3 | -0.15 | 0.49 | -0.48 | 7.00 |
| D11 | 6.9 | 9.9 | 1.38 | 7.92 | -0.36 | 0.43 | -0.61 | 9.70 |
| D13 | 7.5 | 9.0 | 0.54 | 34.8 | 0.24 | 0.50 | ­­­­-0.67 | 18.0 |
| KG | 8.7 | 13.8 | 0.95 | 33.8 | -0.13 | - | - | 103 |
| Nan | 7.2 | 70 | 32.16 | 4.56 | -0.07 | 0.12 | -0.66 | 38.1 |
| Sef | 8.3 | 108 | 143.7 | 3.31 | 0.18 | 0.09 | -0.27 | 133 |
| Ebba | 7.6 | 112 | 18.1 | 3.03 | 0.16 | 0.10 | -0.71 | 1.68 |
| Lang | 8.3 | 28.3 | 1.45 | 49.4 | -0.58 | 0.23 | -0.10 | 131 |
| Sol | 8.8 | 48.0 | 0.88 | 94.8 | 0.78 | 2.10 | -0.06 | 55.1 |
| Skaf | 9.4 | 30.5 | 0.85 | 39.3 | -0.09 | 0.55 | -0.18 | 90.5 |
| Eyja | 8.2 | 5.6 | 1.91 | 16.5 | -0.51 | 1.72 | -0.05 | 130 |
| Drang | 8.5 | 6.5 | 0.83 | 13.6 | -0.14 | 0.59 | -0.36 | 41.9 |
| Sty | 7.5 | 3.0 | 3.75 | 10.7 | -0.09 | 0.66 | -0.31 | 2.06 |
| Aus | 6.7 | 25 | 5.28 | 26.6 | 0.63 | 0.28 | -0.34 | 20.9 |
| Bov | 6.1 | 2.0 | 1.11 | 4.95 | 0.53 | 0.13 | -0.54 | 9.58 |
| HE | 7.7 | 21 | 4.22 | 13.5 | 0.49 | 0.34 | -0.62 | 61.2 |
| ME | 8.0 | 26 | 3.98 | 17.4 | 0.59 | 0.44 | -0.54 | 109 |
| LE | 7.8 | 38 | 7.56 | 24.6 | 0.46 | 0.14 | -0.86 | 9.53 |
| EA | 8.1 | 18 | 3.33 | 18.4 | 0.33 | 0.64 | - | 40.5 |
| Wat | 8.5 | 36 | 0.47 | 33.2 | 0.31 | 1.47 | -0.30 | 6100 |