

Table S2. Trace-element composition (in ppm) of single glass shards in Little Timber and Surprise Creek tephra beds, eastern Beringia

Sample	Rb	Sr	Y	Zr	Nb	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	Th	U	
<b>Little Timber tephra</b>																										
UT622-01	50.77	575.92	11.88	236.39	11.58	1.53	1030.63	28.33	48.56	4.99	18.28	3.84	0.78	0.81	0.49	2.06	0.50	1.71	0.11	1.67	0.29	4.79	1.03	5.99	2.63	
UT622-02	61.80	340.31	14.35	201.69	9.35	1.33	1166.75	30.97	53.52	5.92	20.31	3.66	0.52	2.08	0.00	1.74	0.33	1.45	0.28	2.40	0.11	5.23	0.57	6.26	2.23	
UT622-03	65.78	471.40	15.72	276.82	14.34	1.06	1222.83	36.14	59.83	6.17	25.34	4.78	1.37	6.75	0.49	2.13	0.95	1.86	0.16	1.07	0.33	6.28	1.04	7.49	3.12	
UT622-04	61.29	487.40	15.97	313.20	14.59	1.33	1260.67	38.29	66.66	7.41	25.71	3.11	0.78	2.90	0.47	3.38	0.79	2.15	0.33	2.09	0.46	6.70	1.37	10.14	2.63	
UT622-05	52.22	397.18	14.06	235.38	10.84	1.38	915.94	25.58	48.19	5.13	24.03	2.82	0.76	3.40	0.25	2.57	0.59	2.22	0.25	1.01	0.44	4.79	1.22	5.51	1.99	
UT622-06	71.79	292.91	11.96	143.77	10.48	0.69	1105.99	29.25	50.21	5.37	15.74	2.63	0.44	3.61	0.46	3.04	0.52	1.20	0.12	2.12	0.44	4.62	0.89	8.19	3.07	
UT622-07	57.15	450.36	18.01	306.87	15.82	1.40	1216.37	35.44	59.86	6.38	28.65	4.64	0.76	1.72	0.61	3.36	0.36	1.70	0.20	1.40	0.26	7.56	0.90	7.94	3.07	
UT622-08	67.93	474.99	19.32	208.84	13.18	2.71	1075.00	33.97	60.89	7.68	28.12	6.50	0.29	4.00	0.83	1.43	0.65	2.43		1.92	0.45	7.62	1.64	6.58	2.12	
UT622-09	59.88	431.06	12.58	249.87	11.39	0.64	1240.06	31.10	48.72	5.85	21.15	4.74	1.06	3.60	0.51	2.87	0.42	0.91		1.95	0.29	6.22	0.89	6.71	2.24	
<b>Average</b>	<b>60.96</b>	<b>435.73</b>	<b>14.87</b>	<b>241.43</b>	<b>12.40</b>	<b>1.34</b>	<b>1137.14</b>	<b>32.12</b>	<b>55.16</b>	<b>6.10</b>	<b>23.04</b>	<b>4.08</b>	<b>0.75</b>	<b>3.21</b>	<b>0.51</b>	<b>2.51</b>	<b>0.57</b>	<b>1.74</b>	<b>0.21</b>	<b>1.74</b>	<b>0.34</b>	<b>5.98</b>	<b>1.06</b>	<b>7.20</b>	<b>2.57</b>	
<b>St dev</b>	<b>6.94</b>	<b>83.93</b>	<b>2.63</b>	<b>53.62</b>	<b>2.18</b>	<b>0.60</b>	<b>114.81</b>	<b>4.13</b>	<b>6.80</b>	<b>0.94</b>	<b>4.44</b>	<b>1.22</b>	<b>0.33</b>	<b>1.69</b>	<b>0.16</b>	<b>0.71</b>	<b>0.20</b>	<b>0.50</b>	<b>0.08</b>	<b>0.48</b>	<b>0.12</b>	<b>1.18</b>	<b>0.31</b>	<b>1.42</b>	<b>0.44</b>	
UT398-01	59.83	312.00	10.78	154.12	12.25	1.84	1071.01	27.08	48.85	5.22	19.64	2.77	0.64	2.01	0.37	1.13	0.12	1.32		1.05	0.22	4.50	0.81	7.64	3.44	
UT398-03	73.37	402.93	11.63	217.02	12.65	1.42	1320.38	36.73	58.44	6.95	27.07	3.65	0.93	5.04	0.29		0.26	2.01	0.27	1.96	0.58	7.28	1.15	9.89	3.68	
UT398-04	55.68	379.62	14.03	258.39	11.91		1276.26	31.12	52.69	6.35	16.86	5.18	0.85	4.36	0.50	2.06	0.77	2.09	0.20	2.25	0.37	5.73	0.73	8.11	2.99	
UT398-05	62.41	260.54	12.01	152.51	13.46	1.82	1164.52	32.02	48.65	5.50	21.30	0.83	0.41	0.00	1.08	4.26	0.08	1.91	0.16	1.04	0.20	4.86	0.96	7.99	3.15	
UT398-06	56.84	340.90	13.36	211.69	14.21	1.69	1099.39	31.84	51.18	5.55	16.43	3.72	1.06	3.68	0.45	3.20	0.58	0.85	0.37	2.62	0.38	5.60	0.94	8.73	2.71	
UT398-07	67.80	378.15	11.63	232.35	11.27	1.32	1273.18	33.41	57.12	7.53	17.83	3.50	0.45	5.32	0.67	2.11	0.11	1.45	0.30	1.88		5.75	0.97	8.88	2.95	
UT398-08	72.03	337.08	12.59	175.85	14.59	1.72	1328.01	32.99	55.01	6.01	16.99	3.63	0.93	3.69	0.39	3.86	0.36	2.01	0.27	1.63	0.36	5.60	1.43	8.26	3.20	
UT398-09	64.52	343.34	10.39	168.33	9.76	1.49	1097.05	31.55	52.71	5.75	19.48	4.27	0.53	5.77	0.23	3.14	0.42	1.25	0.30	0.88	0.34	4.98	0.64	7.60	2.60	
UT398-10	51.21	476.63	17.72	302.25	10.63	1.57	1066.41	39.36	56.79	6.01	23.55	2.18	0.86	4.71	0.57	2.17	0.88	2.12	0.23	1.87	0.48	8.57	1.06	8.71	2.45	
UT398-11	68.55	278.06	15.84	121.91	10.99	1.02	1117.70	36.61	48.58	5.12		3.41		6.95	0.15	1.63		0.04	1.19	0.96		5.49	0.46	8.03	3.30	
<b>Average</b>	<b>63.22</b>	<b>350.93</b>	<b>13.00</b>	<b>199.44</b>	<b>12.17</b>	<b>1.54</b>	<b>1181.39</b>	<b>33.27</b>	<b>53.00</b>	<b>6.00</b>	<b>19.91</b>	<b>3.31</b>	<b>0.74</b>	<b>4.61</b>	<b>0.47</b>	<b>2.62</b>	<b>0.40</b>	<b>1.51</b>	<b>0.37</b>	<b>1.61</b>	<b>0.37</b>	<b>5.84</b>	<b>0.91</b>	<b>8.38</b>	<b>3.05</b>	
<b>St dev</b>	<b>7.34</b>	<b>62.73</b>	<b>2.31</b>	<b>55.16</b>	<b>1.58</b>	<b>0.26</b>	<b>106.36</b>	<b>3.49</b>	<b>3.72</b>	<b>0.77</b>	<b>3.55</b>	<b>1.18</b>	<b>0.24</b>	<b>1.42</b>	<b>0.27</b>	<b>1.05</b>	<b>0.29</b>	<b>0.67</b>	<b>0.31</b>	<b>0.61</b>	<b>0.12</b>	<b>1.21</b>	<b>0.27</b>	<b>0.69</b>	<b>0.39</b>	
<b>Surprise Creek tephra</b>																										
UT589-01	61.03	433.17	10.23	225.22	5.81	1.40	1096.70	23.07	35.01	3.73	13.64	3.55		1.40	0.32	1.82	0.56	1.02	0.12	1.31	0.18	6.26	0.89	8.47	1.87	
UT589-03	58.76	402.13	11.53	250.31	7.90	1.18	1108.91	23.44	35.14	4.39	14.61	3.12	0.11	1.11	0.26	2.28	0.53	0.84	0.23	1.48	0.36	8.21	0.49	8.94	1.63	
UT589-04	58.26	411.44	9.47	228.30	5.86		969.93	20.51	32.25	3.35	14.91	3.04	0.49	3.37	0.12	2.89	0.64	0.88	0.06		0.03	8.04	0.59	7.61	2.44	
UT589-05	72.63	399.84	10.67	228.35	7.78	1.95	1111.69	21.97	33.22	4.26	19.73	2.34	0.33	3.29	0.11	2.23	0.64	2.58	0.04	0.36		7.37	0.46	8.40	1.89	
UT589-06	67.52	407.17	8.69	239.18	8.26	1.58	1061.32	20.72	35.65	4.46	14.18	0.81	0.73	3.02	0.34	1.45	0.78	2.46	0.31	0.48	0.10	6.35	0.51	7.03	2.09	
UT589-07	60.66	415.82	8.68	222.59	6.33	1.33	1035.69	24.02	31.85	3.75	12.70	0.53	1.02	1.99	0.44	2.44	0.09	1.36	0.10	1.35	0.45	7.08	0.41	8.88	2.03	
UT589-08	58.77	440.77	10.35	230.38	6.43	1.24	1139.94	23.55	33.54	4.31	14.86	1.95	0.70	1.99	0.28	1.67	0.27	0.89	0.30	1.96	0.16	6.25	0.65	8.93	2.01	
UT589-09	63.20	415.52	9.86	231.89	6.83	1.42	1089.85	24.40	38.28	3.79	14.85	2.29	0.65	2.58	0.31	1.75	0.46	0.90	0.18	1.66	0.21	6.24	0.63	8.66	2.15	
UT589-10	60.87	412.32	9.21	223.90	6.32		1109.07	24.40	35.63	4.54	12.71	3.12	0.83	3.46	0.57	0.92	0.31	1.93	0.05	1.66	0.35	8.85	1.16	10.25	2.54	
UT589-12	62.85	433.17	11.72	249.00	8.64	1.10	1127.49	21.40	34.64	4.28	13.66	2.77	0.59	2.31	0.46	2.13		1.06	0.16	1.39	0.27	7.31	0.62	9.86	2.06	
<b>Average</b>	<b>62.45</b>	<b>417.14</b>	<b>10.04</b>	<b>232.91</b>	<b>7.02</b>	<b>1.40</b>	<b>1085.06</b>	<b>22.71</b>	<b>34.52</b>	<b>4.08</b>	<b>14.58</b>	<b>2.35</b>	<b>0.61</b>	<b>2.45</b>	<b>0.32</b>	<b>1.96</b>	<b>0.47</b>	<b>1.39</b>	<b>0.15</b>	<b>1.29</b>	<b>0.24</b>	<b>7.20</b>	<b>0.64</b>	<b>8.70</b>	<b>2.07</b>	
<b>St dev</b>	<b>4.50</b>	<b>13.97</b>	<b>1.07</b>	<b>9.98</b>	<b>1.04</b>	<b>0.27</b>	<b>50.64</b>	<b>1.44</b>	<b>1.89</b>	<b>0.40</b>	<b>1.99</b>	<b>1.01</b>	<b>0.27</b>	<b>0.83</b>	<b>0.14</b>	<b>0.56</b>	<b>0.22</b>	<b>0.68</b>	<b>0.10</b>	<b>0.53</b>	<b>0.13</b>	<b>0.94</b>	<b>0.23</b>	<b>0.94</b>	<b>0.27</b>	
UT617-01	59.41	342.16	8.13	170.44	7.03	0.68	966.16	18.50	32.26	3.51	13.68	1.70	1.18	2.22	0.19	0.72	0.22	0.82	0.32	0.96	0.50	8.19	0.32	6.37	1.52	
UT617-03	57.29	444.52	14.31	200.63	11.09	0.70	1132.85	22.99	39.64	4.93	17.17	1.60	0.62	4.58	0.42	5.55	0.51	1.65	0.38	2.55	0.25	5.72	0.44	8.60	1.87	
UT617-04	62.15	426.87	13.01	246.31	5.90	1.07	1163.60	21.73	36.23	4.58	15.72	2.89	0.50	2.81	0.38	2.87	0.39	1.26	0.43	0.87	0.25	6.31	0.72	8.69	1.81	
UT617-05	62.08	383.57	9.03	194.72	5.31	2.06	1030.39	19.81	33.35	3.73	11.32	1.27	0.56	1.29	0.31	1.30	0.17	1.53	0.32	0.06	0.16	5.90	0.77	7.75	2.04	
UT617-06	57.45	383.86	7.24	207.67	6.22	1.15	1002.73	20.33	34.68	3.79	9.27	1.71	0.31	2.74	0.40	2.63	0.02	0.35	0.24	1.11	0.16	4.73	0.38	6.83	1.67	
UT617-07	63.78	327.21	7.49	171.09	5.77	0.70	936.82	18.08	29.98	3.12	11.45	1.94	0.16	2.03	0.40	1.49	0.37	0.72	0.11	0.69	0.11	4.82	0.48	6.69</		

UT589-11	60.68	551.29	12.11	169.07	5.91	1.41	1139.42	17.59	31.00	3.60	11.62	2.60	0.36	0.62	0.20	3.46	0.26	2.22	0.07	0.60	0.20	3.39	0.49	6.28	1.89
UT589-12	67.89	402.72	10.48	201.23	7.00	1.51	1146.41	18.98	33.57	3.57	11.71	2.70	0.45	2.56	0.06	1.81	0.27	0.56	0.15	0.76	0.12	6.22	1.29	8.68	2.08
UT589-13	62.82	275.47	7.88	184.01	5.51	1.12	1074.92	20.05	28.80	3.26	13.48	2.02	0.57	2.48	0.16	2.54	0.17	0.17	1.39	0.15	6.38	0.58	7.66	2.36	
UT589-14	66.52	449.93	15.58		7.95	1.32	1280.65	25.30	34.37	3.79	12.72	1.70	1.13	0.66	1.30	1.21	0.59	2.02		1.24	0.09	6.38	0.58	7.66	2.36
UT589-15	69.27	390.00	9.64	219.72	6.41	1.50	1089.15	21.25	33.53	3.54	17.92	3.22	0.70	2.41	0.23	1.36	0.27	0.89	0.04	1.42	0.21	5.22	0.78	7.49	2.33
UT589-16	66.65	327.84	13.42	209.13	7.04	2.22	1136.45	23.17	37.77	4.28	16.15	1.99	1.32	3.23	0.84	3.32	0.35	0.82	0.40	0.95	0.40	5.92	0.92	7.59	2.52
UT589-17	71.78	484.30	5.98	236.80	7.91	3.48	1423.53	23.85	38.90	4.57	23.29	2.34	0.83	6.19	0.55	1.13	0.49	1.66	0.92	0.70	0.27	6.98	0.94	9.88	2.29
UT589-18	53.25	627.65	12.32	211.26	5.04	1.54	1160.50	23.51	37.38	4.76	20.51	0.83	0.54		0.18	1.45	0.17	0.00		2.52	0.12	8.39	0.33	7.59	2.37
UT589-19	58.52	477.79	10.02	199.51	5.19	1.65	1011.81	17.05	32.43	3.53	17.28	4.55	0.28	4.59	0.25		1.10	1.96		0.65	0.20	8.16	0.94	8.70	2.74
UT589-20	56.84	629.40	7.33	190.47	7.23	1.28	1100.78	19.00	31.24	3.72	12.80	2.03	0.68	3.45	0.35	1.81	0.57	1.35		1.16	0.12	5.60	0.65	7.38	1.95
UT589-22	64.93	398.15	12.16	214.60	5.75	1.53	1196.53	25.74	31.03	4.41	12.35	2.23	0.75	3.50	0.38	1.90	0.31		0.07	0.43	0.23	6.65	0.54	8.25	2.06
UT589-23	66.98	349.14	7.95	187.55	6.43	1.48	1033.35	19.51	28.50	2.14	13.69	0.46	0.54	0.97	0.11	0.81	0.22	0.52		1.53	0.10	6.90	0.66	6.07	1.55
UT589-24	61.60	284.44	7.93	191.43	5.28	1.53	1070.10	24.80	32.10	3.77	11.63	1.54	0.58	1.31	0.28	0.92	0.67	0.94	0.13	1.41	0.27	4.74	0.68	8.26	1.93
UT589-25	62.35	286.41	7.20	199.17	5.50	1.55	1071.36	19.19	33.64	3.67	9.29	2.73	0.81	1.84	0.11	2.36	0.20	1.21		1.22	0.16	5.23	0.43	7.09	1.96
UT589-26	72.91	340.24	10.36	228.20	6.66	1.37	1184.91	22.83	33.74	3.01	13.42	3.22	1.02	2.63	0.63	0.25	0.21	2.24	0.40	1.18	0.13	6.40	0.80	7.65	1.94
UT589-27	74.83	290.55	10.21	183.37	6.01	2.14	1134.75	21.49	49.73	3.82	17.19	2.47	0.81	6.57	0.35	3.63	0.32	0.96	0.20	1.33	0.06	6.21	0.91	6.51	1.85
UT589-28	72.51	331.40	7.41	205.57	6.95	1.23	1218.02	21.11	36.46	3.69	13.59	2.22	0.43	1.76	0.46	1.36	0.61	1.90	0.14	1.33	0.33	6.88	0.89	7.26	2.46
UT589-30	64.28	299.38	5.77	194.38	6.76	1.47	1058.00	18.63	31.27	2.90	11.35	2.37	0.70	3.04	0.40	1.99	0.38	0.29	0.26	1.40	0.06	4.87	0.58	7.18	2.49
<b>Average</b>	<b>66.36</b>	<b>418.33</b>	<b>9.75</b>	<b>201.56</b>	<b>6.30</b>	<b>1.57</b>	<b>1140.59</b>	<b>21.18</b>	<b>34.12</b>	<b>3.76</b>	<b>13.71</b>	<b>2.42</b>	<b>0.71</b>	<b>3.13</b>	<b>0.36</b>	<b>1.87</b>	<b>0.43</b>	<b>1.33</b>	<b>0.25</b>	<b>1.20</b>	<b>0.21</b>	<b>6.09</b>	<b>0.69</b>	<b>7.61</b>	<b>2.25</b>
<b>St dev</b>	<b>6.18</b>	<b>108.95</b>	<b>2.62</b>	<b>20.04</b>	<b>0.90</b>	<b>0.46</b>	<b>108.21</b>	<b>2.88</b>	<b>4.63</b>	<b>0.72</b>	<b>3.66</b>	<b>1.05</b>	<b>0.42</b>	<b>1.66</b>	<b>0.26</b>	<b>1.00</b>	<b>0.25</b>	<b>0.83</b>	<b>0.22</b>	<b>0.44</b>	<b>0.12</b>	<b>1.17</b>	<b>0.24</b>	<b>0.92</b>	<b>0.41</b>

**Chester Bluff tephra** (November 2011 run)

UT1660-1	63.81	355.11	7.98	131.28	6.01	1.32	1130.14	17.18	32.82	4.10	10.71	1.40	1.06	2.26	0.15	1.06	0.33	0.97	0.17	1.23		4.39	0.60	5.68	2.32
UT1660-3	67.23	426.70	6.90	185.30	6.93	1.32	1056.94	18.73	32.04	3.53	12.02	1.73	0.43	1.98	0.12	2.69	0.74	1.93	0.10	1.53	0.40	6.98	0.92	7.37	2.04
UT1660-4	65.02	423.08	8.41	162.58	5.67	1.47	1019.03	17.24	28.51	3.05	10.47	1.66	1.07	1.80	0.26	1.85	0.47	0.68	0.11	1.06	0.02	4.36	0.88	6.61	1.95
UT1660-6	69.78	376.39	7.74	176.65	4.93	1.61	1004.98	16.99	28.98	3.55	9.85	3.31	0.57	3.15	0.17	1.89	0.42	0.83	0.13	1.22	0.22	4.01	0.53	6.30	1.91
UT1660-7	66.62	362.64	10.49	218.68	5.62	0.96	1453.09	22.34	38.29	5.25	12.33	0.81	0.36	0.89	0.52	2.43	0.38	2.65	0.09	0.96	0.19	6.54	0.36	8.20	2.39
UT1660-8	57.71	247.85	8.03	168.95	6.53	1.06	1185.84	18.19	28.96	3.35	12.88	1.64	1.34	2.13	0.26	1.04	0.28	0.48	0.05	0.61	0.25	4.43	0.34	7.06	1.76
UT1660-9	71.24	459.66	10.34	221.77	6.94	1.57	1207.17	21.29	37.92	3.73	13.63	4.40	1.05	4.78	0.42	1.64	0.66	1.25	0.12	1.29	0.15	6.45	0.83	8.05	2.18
UT1660-10	75.75	337.41	8.20	222.90	6.38	1.27	1213.21	20.10	36.58	3.80	19.44	1.54	0.73	1.71	0.13	2.88	0.51	1.46	0.05	0.92	0.11	5.88	0.40	8.30	2.57
UT1660-11	66.12	287.56	9.10	161.73	4.78	1.32	963.89	16.58	32.25	2.92	10.82	1.34	0.43	1.86	0.07	2.74	0.29	0.46		1.26	0.15	4.58	0.63	6.76	2.00
UT1660-14	62.26	408.60	6.31	175.26	5.49	0.73	967.24	17.17	34.97	2.92	14.45	3.12	0.65	0.96	0.15	1.75	0.23	0.47	0.09	0.68	0.17	3.67	0.42	6.03	1.90
UT1660-15	57.90	281.09	6.81	171.95	7.40	1.69	1044.55	20.34	30.97	4.25	12.27	3.14	0.49	1.92	0.21	0.98	0.32	0.33	0.15	1.60	0.13	4.09	0.20	7.91	1.64
UT1660-16	55.04	342.74	9.58	176.84	5.01	0.72	1087.33	20.89	36.21	4.01	14.09	3.82	1.37	1.40	0.44	2.39	0.69	0.54	0.15	1.01	0.25	7.12	0.59	6.75	2.11
UT1660-18	62.31	308.41	7.38	212.52	7.14	0.68	1205.53	19.02	37.40	3.59	8.29	4.52	0.63	3.31	0.22	3.06	0.08	1.03		0.62	0.30	5.00	0.82	6.87	2.55
UT1660-19	66.22	358.02	6.43	222.09	6.93	1.76	1131.57	18.50	34.96	3.09	18.37	1.90	1.30	3.34	0.28	3.66	0.78	0.21	0.10	1.25	0.16	5.64	0.82	8.35	1.96
UT1660-20	80.79	296.71	10.29	269.49		1.80	1157.12	19.96	36.92	3.57	17.31	2.67	0.50	1.08	0.24	1.94	0.38	1.32	0.09	1.19	0.21	7.42	1.26	8.23	2.19
UT1660-21	59.80	303.81	8.29	181.03	5.69	1.48	1152.16	18.89	31.85	3.13	13.07	2.88	0.84	1.65	0.33	1.26	0.05	1.28	0.16	0.81	0.18	4.97	0.78	6.41	3.28
UT1660-22	73.88	389.55	5.92	153.86	5.27	1.56	1070.00	16.91	30.13	2.82	14.13	1.89	0.87	2.97	0.06	0.55		0.32	0.72	0.08	4.83	0.61	5.86	2.16	
UT1660-23	66.97	271.93	8.64	187.29	4.64	1.22	1172.22	18.98	39.03	3.96	15.55	1.52	0.87	2.33	0.68	1.04	0.31	0.86	0.34	1.28	0.20	6.54	0.31	7.60	2.36
UT1660-24	60.14	360.03	12.40	190.36	7.00	1.52	1190.24	22.42	34.38	2.88	9.46	4.70	0.68	1.84	0.10	1.84	0.93	0.95		0.43	0.15	6.03	0.71	7.12	2.63
UT1660-25	55.78	246.76	8.18	172.77	6.26	2.01	1093.24	20.39	28.64	3.96	12.61	0.99	1.06	3.35	0.56	1.42	0.18	1.13	0.17	1.97	0.03	3.17	0.52	5.24	2.30
UT1660-26	54.75	211.38	6.52	154.98	6.10	0.93	913.98	15.09	27.45	3.39	11.18	0.84	0.79	3.06	0.30	0.68	0.72	0.95	0.22	0.73	0.10	4.33	0.60	5.21	1.71
UT1660-27	59.17	354.98	7.58	167.88	5.72	0.95	1031.43	18.23	32.33	3.22	11.58	2.29	0.58	1.76	0.33	1.08	0.49	0.54	0.25	1.58	0.11	6.01	0.51	6.71	2.29
UT1660-28	60.97	452.89	9.56	192.70	5.31	0.92	1130.24	19.75	33.27	3.40	11.11	1.48	0.18	3.19	0.44	3.02	0.35	0.71	0.10	0.19	0.29	6.77	0.21	6.27	2.63
UT1660-29	61.76	244.91	10.01	197.49	5.19	1.62	1195.71	19.30	33.53	3.68	10.26		0.52	2.50	0.09	2.05	0.48	0.54	0.06	1.35	0.12	4.94	0.96	7.33	1.82
<b>Average</b>	<b>64.21</b>	<b>337.84</b>	<b>8.38</b>	<b>186.51</b>	<b>5.95</b>	<b>1.31</b>	<b>1115.70</b>	<b>18.94</b>	<b>33.27</b>	<b>3.55</b>	<b>12.75</b>	<b>2.33</b>	<b>0.77</b>	<b>2.30</b>	<b>0.27</b>	<b>1.87</b>	<b>0.44</b>	<b>0.94</b>	<b>0.14</b>	<b>1.06</b>	<b>0.17</b>	<b>5.34</b>	<b>0.62</b>	<b>6.93</b>	<b>2.19</b>
<b>St dev</b>	<b>6.68</b>	<b>68.96</b>	<b>1.60</b>	<b>29.71</b>	<b>0.83</b>	<b>0.37</b>	<b>112.28</b>	<b>1.85</b>	<b>3.44</b>	<b>0.55</b>	<b>2.78</b>	<b>1.19</b>	<b>0.32</b>	<b>0.93</b>	<b>0.17</b>	<b>0.84</b>	<b>0.23</b>	<b>0.55</b>	<b>0.08</b>	<b>0.41</b>	<b>0.09</b>	<b>1.21</b>	<b>0.26</b>	<b>0.95</b>	<b>0.37</b>

Notes: Laser ablation inductively-coupled plasma mass spectrometry (LA-ICP-MS) trace-element analyses were performed at Aberystwyth University, Wales, using a Coherent GeoLas 193 nm Excimer laser system coupled to a Thermo Finnegan

Element 2 sector field ICP-MS. Details of analytical methods, calibration strategies, and typical detection limits are given in Pearce et al. (2004, 2007) with calibration against the NIST 61x reference glasses using <sup>29</sup>Si as an internal standard (Pearce et al., 1997). Fractionation factor used is based on Pearce et al. (2011).