TABLE S1

U-Pb data for analyzed zircon from volcanic rocks of the Midcontinent Rift.

	Composition					Ratios						Ages (Ma)				
Sample	Pb_c[‡]	Pb^*[‡]	Th	^{206}Pb[§]	^{208}Pb[#]	^{206}Pb[††]	err	^{207}Pb[††]	err	^{207}Pb[††]	err	^{206}Pb	err	^{207}Pb	err	corr.
Fractions[†]	(pg)	Pb_c	U	^{204}Pb	^{206}Pb	^{238}U	(2σ%)	^{235}U	(2σ%)	^{206}Pb	(2σ%)	^{238}U	(2σ)	^{206}Pb	(2σ)	coef.
BBC-SBA1: ***Aplite dike, Silver Bay Intrusion, Beaver Bay Complex, North Shore Volcanic Group***																
z6	0.4	290.7	0.82	15805.4	0.247	0.184559	(.03)	1.93163	(.07)	0.07594	(.06)	**1091.83**	**0.32**	1092.6	1.3	0.51
z5	0.2	338.1	0.81	18395.5	0.246	0.184540	(.03)	1.93234	(.07)	0.07598	(.05)	**1091.73**	**0.30**	1093.6	1.2	0.45
z3	0.2	367.4	0.84	19846.5	0.255	0.184507	(.04)	1.93078	(.07)	0.07593	(.05)	**1091.55**	**0.35**	1092.3	1.3	0.47
z2	0.3	349.1	0.87	18765.4	0.261	0.184506	(.04)	1.93121	(.08)	0.07595	(.05)	**1091.54**	**0.38**	1092.8	1.2	0.59
z4	0.9	88.9	0.78	4888.8	0.236	0.184501	(.04)	1.93245	(.17)	0.07600	(.16)	**1091.52**	**0.45**	1094.1	3.3	0.35
z1	0.3	607.3	1.02	31519.9	0.308	0.184472	(.03)	1.93161	(.06)	0.07598	(.04)	**1091.36**	**0.34**	1093.6	1.0	0.61
LST-KP1: ***Feldspar-phyric Andesite, Lake Shore Traps, Keweenaw Peninsula***																
z1	0.1	58.9	1.22	2946.4	0.368	0.184169	(.30)	1.93061	(.42)	0.07606	(.28)	1089.71	2.96	1095.8	5.7	0.74
z5	1.2	23.9	1.14	1224.0	0.345	0.183629	(.10)	1.92357	(.66)	0.07601	(.63)	1086.77	1.02	1094.4	12.6	0.34
z2	0.1	82.4	0.61	4722.3	0.183	0.183615	(.08)	1.91725	(.21)	0.07576	(.18)	1086.70	0.76	1087.9	3.7	0.53
z8	0.3	81.1	1.03	4220.3	0.311	0.183499	(.06)	1.91762	(.22)	0.07583	(.19)	**1086.06**	**0.60**	1089.6	3.9	0.48
z4	0.1	730.9	1.45	34681.7	0.437	0.183433	(.05)	1.91546	(.10)	0.07577	(.05)	**1085.70**	**0.49**	1088.1	1.3	0.84
z3	0.2	173.9	0.79	9525.6	0.238	0.183396	(.07)	1.91314	(.14)	0.07569	(.10)	**1085.50**	**0.67**	1086.0	2.1	0.70
z9	0.1	193.3	0.86	10419.9	0.259	0.183392	(.05)	1.91455	(.13)	0.07575	(.10)	**1085.48**	**0.55**	1087.6	2.1	0.67
z6	0.2	538.5	1.00	28082.6	0.302	0.183321	(.06)	1.91203	(.10)	0.07568	(.06)	**1085.09**	**0.56**	1085.7	1.3	0.82
MI-WSB1: ***Lithic Tuff, West Sandy Bay Member, Michipicoten Island Formation***																
z7	0.4	17.3	0.94	932.5	0.285	0.184064	(.21)	1.92771	(.89)	0.07599	(.84)	1089.1	2.1	1094	17	0.35
z10	2.4	19.1	0.88	1042.8	0.266	0.183256	(.11)	1.91748	(.76)	0.07592	(.74)	**1084.7**	**1.0**	1092	15	0.32
z11	0.3	164.4	0.93	8712.2	0.282	0.183214	(.03)	1.91184	(.10)	0.07572	(.09)	**1084.51**	**0.33**	1086.7	1.9	0.39

z9	0.4	184.9	0.85	9992.7	0.256	0.183184	(.03)	1.91244	(.10)	0.07575	(.08)	**1084.34**	**0.31**	1087.6	1.7	0.42
z6	2.5	21.9	0.91	1184.3	0.276	0.183162	(.15)	1.91849	(.69)	0.07600	(.65)	**1084.2**	**1.5**	1094	13	0.35
z12	0.5	108.5	0.84	5881.7	0.253	0.183112	(.07)	1.90962	(.17)	0.07567	(.14)	**1083.95**	**0.67**	1085.5	2.9	0.48
z8	0.8	43.1	0.93	2302.5	0.280	0.183097	(.08)	1.91479	(.36)	0.07588	(.34)	**1083.87**	**0.77**	1091.0	6.8	0.39
z2	0.2	129.7	0.80	7091.0	0.241	0.182961	(.07)	1.90990	(.16)	0.07574	(.12)	1083.13	0.73	1087.4	2.6	0.64
z4	0.6	87.8	0.87	4725.4	0.264	0.181979	(.08)	1.89975	(.21)	0.07575	(.18)	1077.78	0.84	1087.5	3.6	0.54
z3	0.3	82.8	0.94	4395.8	0.283	0.181774	(.07)	1.89825	(.21)	0.07577	(.18)	1076.66	0.67	1088.2	3.7	0.53
MI-DI1: ***Banded rhyolite, Davieaux Island Member, Michipicoten Island Formation***																
z1	0.3	25.8	0.64	1474.9	0.195	0.183759	(.13)	1.91712	(.59)	0.07570	(.55)	1087.5	1.3	1086	11	0.35
z2	0.3	115.7	0.57	6688.0	0.171	0.183155	(.10)	1.91172	(.18)	0.07574	(.15)	**1084.2**	**1.0**	1087.2	3.0	0.57
z6	0.3	48.0	0.62	2747.6	0.187	0.183088	(.07)	1.90947	(.31)	0.07567	(.29)	**1083.82**	**0.67**	1085.6	5.8	0.33
z3	0.2	173.2	0.51	10136.4	0.155	0.183033	(.05)	1.90796	(.11)	0.07564	(.09)	**1083.52**	**0.50**	1084.6	1.9	0.55
z4	0.3	86.4	0.52	5057.2	0.157	0.183029	(.05)	1.90958	(.18)	0.07570	(.16)	**1083.50**	**0.49**	1086.3	3.3	0.35
z5	0.3	237.0	0.55	13737.7	0.166	0.183000	(.04)	1.90826	(.08)	0.07566	(.06)	**1083.34**	**0.37**	1085.2	1.4	0.49

Notes: Corr. coef. = correlation coefficient. Age calculations are based on the decay constants of Jaffey et al. (1971).

† All analyses are single zircon grains and pre-treated by the thermal annealing and acid leaching (CA-TIMS) technique. Data used in age calculations are in bold.

‡ Pb_c is total common Pb in analysis. Pb* is radiogenic Pb concentration.

§ Measured ratio corrected for spike and fractionation only.

Radiogenic Pb ratio.

†† Corrected for fractionation, spike, blank, and initial Th/U disequilibrium in magma. Mass fractionation corrections of 0.25%/amu and 0.18%/amu ± 0.04%/amu (atomic mass unit) was applied to single-detector Daly analyses on Sector54 and X62 instruments, respectively, unless Pb double-spike was used. All common Pb is assumed to be blank. Total procedural blank was less than 0.1pg for U. $^{238}U/^{235}U = 137.818 \pm 0.045$ (2σ) is utilized following Hiess et al., (2012). Blank isotopic composition: $^{206}Pb/^{204}Pb = 18.15 \pm 0.47$, $^{207}Pb/^{204}Pb = 15.30 \pm 0.29$ and $^{208}Pb/^{204}Pb = 37.11 \pm 0.87$.