Laki and Tambore Seen in Ice Cores

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1 SPATIAL AND TEMPORAL OXYGEN ISOTOPE VARIABILITY IN NORTHERN GREENLAND S. Weissbach (2016) (SPECS)

Between 1993 and 1995 twelve ice cores were drilled as a part of the North Greenland Traverse(NGT). The ice cores were named B16 to B30, with B21, B23 and B26 to B30 located on ice divides and B16 to B20 located east of the main Greenlandic ice divide. A stack of these 12 $\delta^{18}O$ records thus represent a collective mean of the isotope signal for northern Greenland, which can be interpreted as a proxy for temperatures.
A low resolution density profile was measured by weighing single ice segments of about 1 m, which was then used to calculate the water equivalent(w.e.) depth of the measured ice.
From the density-corrected (w.e.) high-resolution electrical conductivity profiles and SO_4^{2-}-concentration profiles for the cores B16, B18, B20, B21 and B30 a number of volcanic horizons can be detected and used to synchronize the cores.

Core ID	Core length [m]	Elevation [m a.s.l.]	Geographic position	
			Latitude (°N)	Longitude (°W)
B16	102.4	3040	73.94	37.63
B17	100.8	2820	75.25	37.63
B18	150.2	2508	76.62	36.40
B19	150.4	2234	78.00	36.40
B20	150.4	2147	78.83	36.50
B21	100.6	2185	80.00	41.14
B22	120.6	2242	79.34	45.91
B23	150.8	2543	78.00	44.00
B26	119.7	2598	77.25	49.22
B27	175.0	2733	76.66	46.82
B28	70.7	2733	76.66	46.82
B29	110.5	2874	76.00	43.50
B30	160.8	2947	75.00	42.00

Table 1: Overview of the twelve North Greenland Traverse cores drilled between 1993 and 1995.

Year [AD]	Event	B16	B17	B18	B19	B20	B21	B22	B23	B26	B27	B28	B29	B30	VEI	Sulfate
1912	Katmai *	11.60	9.31	8.48	7.38	7.86	8.62	11.56	9.49	14.27	13.69	14.44	11.41	13.12	6	11.0
1816	Tambora*	24.49	20.27	18.91	16.77	17.27	19.46	26.17	21.54	31.50	31.13	31.91	25.97	29.91	7	58.7
1783	Laki*	29.36	24.19	22.45	19.94	20.32	23.10	31.25	25.93	37.77	37.19	38.07	31.38	35.80	4	93.0
1739	Tarumai*	35.52	-	26.90	24.10	24.62	-	-	-	-	-		-	43.07	5	0
1694	Hekla**	-	34.47	31.84	28.54	29.16	32.87	44.06	-	-	-		44.22	50.45	4	0
1666	Unknown**	46.22	-	34.75	31.20	32.10	35.93	48.13	-	-	-		48.50	-		0
1640	Komagatake**	49.90	-	37.48	33.69	34.80	-	-	-	-	-		52.36	-	4	33.8
1601	Huaynaputina**		44.97	41.62	-	38.70	42.95	-	48.31	69.22	68.39		58.25	65.94	4	46.1
1479	Mt. St. Helens**		58.84	54.42	-	51.31	56.04	75.09	-		89.42		76.81	86.60		7.4
1259	Samalas*			76.60	68.03	72.86			89.35		126.10			122.10		145.8
1179	Katla*			-	-	80.04			98.60							0
934	Eldgjá			109.20	99.20											0
Max. age of core [AD]		1470	1363	874	753	775	1372	1372	1023	1505	1195	163	1471	1242		
Max. difference [a]		7		3		8	6			4			3			