



Supplement of

Characteristics of mountain glaciers in the northern Japanese Alps

Kenshiro Arie et al.

Correspondence to: Kenshiro Arie (kenshiroarie@gmail.com)

The copyright of individual parts of the supplement might differ from the article licence.

Supplement: Area, average winter balance (AB_w), average summer balance (AB_s), average mass balance amplitude (A_α), standard deviations of annual mass balance (sBn), and observation periods of VSGs in the northern Japanese Alps and glaciers around the world.

NO.	Name	Region	Lat (°)	Log (°)	Area (km ²)	Abw (mm weq)	ABs (mm weq)	A _α (mm weq)	sBn (mm weq)	Observation periods (Year)
1	KAKUNEZATO	Northern Japanese Alps (590 kg/m ³)	36.63	137.76	0.08	14223.43	-14642.33	14642.33	4706.40	2015-2019(4years)
2	SANNOMADO	Northern Japanese Alps (590 kg/m ³)	36.63	137.64	0.10	13550.83	-14927.00	14238.91	4811.04	2015-2019(4years)
3	KOMADO	Northern Japanese Alps (590 kg/m ³)	36.63	137.63	0.11	12183.50	-13661.45	12922.48	4606.02	2015-2019(4years)
4	GOZENZAWA	Northern Japanese Alps (590 kg/m ³)	36.57	137.62	0.03	10059.50	-10742.43	10821.70	2872.22	2015-2019(4years)
5	KAKUNEZATO	Northern Japanese Alps (431 kg/m ³)	36.63	137.76	0.08	10390.33	-10696.34	10696.34	3438.07	2015-2019(4years)
6	SANNOMADO	Northern Japanese Alps (431 kg/m ³)	36.63	137.64	0.10	9898.99	-10904.30	10401.65	3514.50	2015-2019(4years)
7	KOMADO	Northern Japanese Alps (431 kg/m ³)	36.63	137.63	0.11	8900.15	-9979.81	9439.98	3364.74	2015-2019(4years)
8	GOZENZAWA	Northern Japanese Alps (431 kg/m ³)	36.57	137.62	0.03	7348.55	-7847.43	7905.34	2098.18	2015-2019(4years)
9	KORYTO	Kamchatka	54.83	161.80	7.54	4430.00	-4320.80	4375.40	1696.12	1982-2000(5years)
10	IVORY	New Zealand	-43.13	170.93	0.80	2630.00	-5013.33	3821.67	1092.86	1970-1975(6years)
11	HANSEBREEN	Scandinavia	61.75	5.68	2.75	3426.28	-4034.72	3730.50	1511.49	1986-2017(32years)
12	LUPO	Alps	46.08	9.99	0.20	3354.11	-3948.44	3651.28	1108.90	2010-2018(9years)
13	AALFOTBREEN	Scandinavia	61.75	5.65	3.98	3606.65	-3692.61	3649.63	1436.59	1963-2017(54years)
14	OSSOUE	Alps	42.77	-0.14	No record	2798.13	-4281.88	3540.00	1056.16	2002-2017(16years)
15	KOZELSKIY	Kamchatka	53.23	158.82	1.80	3451.96	-3608.26	3530.11	1017.90	1973-1997(23years)
16	NOISY CREEK	Western north America	48.67	-121.53	0.46	3130.87	-3652.67	3391.77	1071.96	1993-2016(15years)
17	NORTH KLAWATTI	Western north America	48.57	-121.09	1.48	2904.87	-3570.47	3237.67	937.77	1993-2016(16years)
18	HOEGTUVBREEN	Scandinavia	66.45	13.64	2.56	3210.00	-3206.14	3208.07	877.41	1971-1977(7years)
19	SPERRY	Western north America	48.63	-113.75	0.78	2958.46	-3405.38	3181.92	844.93	2005-2017(13years)
20	NISQUALLY	Western north America	46.82	-121.74	6.67	2796.00	-3551.00	3173.50	670.11	2006-2015(10years)
21	SENTINEL	Western north America	49.89	-122.98	1.74	3180.52	-3042.39	3111.46	922.16	1966-1989(23years)
22	SOUTH CASCADE	Western north America	48.35	-121.06	1.90	2790.23	-3380.04	3085.13	999.97	1959-2017(57years)
23	SVELGJABREEN	Scandinavia	59.95	6.28	22.34	3060.73	-2942.82	3001.77	1114.09	2007-2017(11years)
24	SURETTA MERID.	Alps	46.51	9.36	0.13	2358.43	-3614.14	2986.29	909.68	2010-2018(7years)
25	CALDERONE	Alps	42.47	13.57	0.03	2903.75	-2999.50	2951.63	1187.81	2006-2017(10years)
26	ENGABREEN	Scandinavia	66.65	13.85	36.25	3044.50	-2848.00	2946.25	1007.17	1970-2017(48years)
27	BLOMSTOELSKARDSBREEN	Scandinavia	59.95	6.33	22.54	3171.09	-2657.64	2914.36	1141.75	2007-2017(11years)
28	SANDALEE	Western north America	48.41	-120.79	0.18	2877.46	-2917.38	2897.42	786.63	1995-2016(13years)
29	SVARTISHEIBREEN	Scandinavia	66.55	13.76	5.53	3053.29	-2687.71	2870.50	1114.62	1988-1994(7years)
30	JOSTEFONN	Scandinavia	61.42	6.55	3.88	2749.60	-2913.40	2831.50	924.08	1996-2000(5years)
31	ROLLESTON	New Zealand	-42.89	171.53	0.11	2538.63	-3075.63	2807.13	1203.26	2011-2018(8years)
32	OBRUCHEV	Urals	67.64	65.78	0.30	2666.82	-2864.55	2765.68	838.37	1958-1979(23years)
33	ECHAURREN NORTE	Andes	-33.58	-70.13	0.40	2473.31	-2948.48	2710.89	1548.04	1976-2017(42years)
34	EMMONS	Western north America	46.85	-121.72	11.27	2366.36	-3029.09	2697.73	803.34	2006-2016(11years)
35	WOOLSEY	Western north America	51.11	-118.06	3.92	2588.00	-2772.22	2680.11	779.98	1966-1975(10years)
36	BREIDABLIKBREA	Scandinavia	60.07	6.37	3.21	2298.75	-3004.38	2651.56	1274.18	1963-2012(16years)
37	BONDHUSBREA	Scandinavia	60.03	6.33	10.67	2556.00	-2682.60	2619.30	937.54	1977-1981(5years)
38	BREWSTER	New Zealand	-44.07	169.43	2.03	2466.79	-2749.50	2608.14	1086.89	2005-2018(14years)
39	TIEDEMANN	Western north America	51.33	-125.05	62.69	1926.67	-3275.00	2600.83	168.93	1981-1990(6years)
40	DJANKUAT	Caucasus	43.19	42.76	2.69	2470.63	-2719.38	2595.00	715.47	1968-2018(48years)
41	GRAAFJELLSBREA	Scandinavia	60.08	6.40	8.05	2356.65	-2792.41	2574.53	1302.32	1964-2012(17years)
42	LANGFJORDJOEKELLEN	Scandinavia	70.13	21.74	3.22	2060.85	-3009.85	2535.35	734.32	1989-2017(27years)
43	TROLLBERGDALS BREEN	Scandinavia	66.72	14.44	1.80	2308.60	-2750.50	2529.55	831.46	1970-1994(10years)
44	HALLSTAETTER G.	Alps	47.48	13.62	2.83	1975.33	-3034.58	2504.96	644.54	2001-2017(12years)
45	WOLVERINE	Western north America	60.42	-148.90	No record	2297.48	-2638.00	2467.74	1126.28	1966-2017(50years)
46	STORGLOMBREEN	Scandinavia	66.67	14.00	61.12	2153.80	-2707.80	2430.80	1010.57	1985-2005(10years)
47	LANGJOKULL ICE CAP	Iceland	64.67	-20.10	871.00	1774.79	-3078.86	2426.82	971.37	2001-2017(14years)
48	IGAN	Urals	67.58	66.00	0.81	2319.55	-2519.64	2419.59	685.54	1958-1979(22years)
49	BLAABREEN	Scandinavia	60.09	6.44	2.31	2025.33	-2811.67	2418.50	1186.35	1963-1968(6years)
50	AUSTDALSBREEN	Scandinavia	61.82	7.35	10.63	2176.37	-2616.63	2396.50	1094.00	1988-2017(30years)

NO.	Name	Region	Lat (°)	Log (°)	Area (km ²)	Abw (mm weq)	ABs (mm weq)	Aa (mm weq)	SBn (mm weq)	Observation periods (Year)
51	RUKLEBREEN	Scandinavia	60.07	6.43	1.85	2485.00	-2274.00	2379.50	993.33	1964-1968(5years)
52	SILVER	Western north America	48.98	-121.24	0.40	2318.07	-2435.87	2376.97	796.60	1993-2016(15years)
53	MALADETA	Alps	42.65	0.64	0.23	2051.04	-2700.70	2375.87	751.72	1992-2016(23years)
54	HELM	Western north America	49.96	-122.99	1.41	1893.33	-2853.73	2373.53	807.67	1976-2017(15years)
55	SCHWARZBACH	Alps	46.60	8.61	0.04	1936.80	-2769.00	2352.90	720.78	2013-2017(5years)
56	BUBA	Caucasus	42.75	43.74	3.75	2154.92	-2379.23	2267.08	306.48	1968-1980(13years)
57	TUNSBERGDALESBREEN	Scandinavia	61.60	7.05	52.21	2218.43	-2302.57	2260.50	1197.82	1966-1972(7years)
58	EYJABAKKAJOKULL	Iceland	64.65	-15.58	112.00	1988.40	-2514.90	2251.65	809.54	1991-2017(20years)
59	VESLEDALSBREEN	Scandinavia	61.85	7.26	4.10	2040.17	-2429.17	2234.67	1120.75	1967-1972(6years)
60	SARENNE	Alps	45.12	6.13	0.10	1637.47	-2772.57	2205.02	1214.02	1949-2018(70years)
61	OKSTINDBREEN	Scandinavia	66.02	14.29	14.01	2294.45	-2111.30	2202.88	980.06	1987-1997(11years)
62	BENCH	Western north America	51.43	-124.92	10.35	1863.75	-2523.75	2193.75	400.50	1981-1990(8years)
63	RUNDVASSBREEN	Scandinavia	67.30	16.06	10.85	1846.90	-2533.50	2190.20	947.48	2002-2017(10years)
64	THRANDARJOKULL	Iceland	64.70	-14.88	19.40	2086.67	-2268.33	2177.50	787.75	1991-1996(6years)
65	NIGARDSBREEN	Scandinavia	61.72	7.13	46.61	2227.86	-2113.48	2170.67	965.51	1962-2017(56years)
66	TSANFLEURON	Alps	46.32	7.23	2.47	1467.38	-2869.13	2168.25	991.74	2010-2017(8years)
67	PLACE	Western north America	50.43	-122.60	3.45	1710.44	-2597.68	2154.06	762.04	1965-2017(25years)
68	GOLDBERG K.	Alps	47.04	12.97	1.03	1687.19	-2558.50	2122.84	669.49	2001-2017(16years)
69	BRIDGE	Western north America	50.82	-123.57	88.10	1864.00	-2334.00	2099.00	787.93	1981-1985(5years)
70	REMBESDALSKAAKA	Scandinavia	60.54	7.37	17.26	2056.25	-2136.36	2096.31	1088.30	1963-2017(55years)
71	SEX ROUGE	Alps	46.33	7.22	0.26	1455.33	-2705.67	2080.50	950.81	2012-2017(6years)
72	TUNGNAARJOKULL	Iceland	64.32	-18.07	345.00	1569.72	-2587.78	2078.75	927.48	1986-2017(18years)
73	PENDENTE (VEDR.) / HANGENDERF.	Alps	46.97	11.22	0.85	1463.86	-2692.71	2078.29	666.57	1999-2017(14years)
74	OMNSBREEN	Scandinavia	60.63	7.48	1.50	1612.00	-2536.00	2074.00	1190.31	1966-1970(5years)
75	ANDREI	Western north America	56.93	-130.97	91.89	1810.00	-2263.33	2036.67	396.67	1978-1990(9years)
76	ALEXANDER	Western north America	57.10	-130.82	5.74	1676.25	-2391.25	2033.75	522.52	1978-1990(8years)
77	PLAINE MORTE	Alps	46.38	7.49	7.41	1325.63	-2721.63	2023.63	813.03	2010-2017(8years)
78	PIZOL	Alps	46.96	9.39	0.06	1401.00	-2639.00	2020.00	482.25	2007-2017(11years)
79	BASODINO	Alps	46.42	8.48	1.76	1704.44	-2331.28	2017.86	776.10	1993-2017(25years)
80	HOFJOKULL E	Iceland	64.80	-18.58	213.10	1651.38	-2254.83	1953.10	880.68	1989-2017(29years)
81	HARBARDSBREEN	Scandinavia	61.70	7.68	13.17	1780.40	-2099.00	1939.70	673.83	1997-2001(5years)
82	SANKT ANNA	Alps	46.60	8.60	0.18	1525.00	-2349.33	1937.17	442.34	2012-2017(6years)
83	EKLUTNA EAST BRANCH	Western north America	61.23	-148.97	No record	1637.50	-2225.00	1931.25	843.86	2008-2015(8years)
84	FORNO	Alps	46.30	9.70	8.95	1609.00	-2247.17	1928.08	283.29	1955-1960(6years)
85	SYKORA	Western north America	50.87	-123.58	25.35	1858.00	-1998.00	1928.00	752.85	1976-1985(10years)
86	HOFJOKULL SW	Iceland	64.72	-19.05	48.80	1631.67	-2142.50	1887.08	1145.15	2006-2017(12years)
87	BREIDAMJOKULL E. B.	Iceland	64.22	-16.33	995.00	1295.20	-2414.80	1855.00	315.31	2001-2005(5years)
88	BLOMSTERSKARDSBREEN	Scandinavia	68.34	17.85	2.18	1772.67	-1922.33	1847.50	772.04	2007-2017(11years)
89	EKLUTNA	Western north America	61.25	-148.99	31.60	1622.27	-2058.64	1840.45	738.67	1986-2015(11years)
90	WURTEN K.	Alps	47.03	13.00	0.34	1403.21	-2258.72	1830.97	520.48	1983-2011(29years)
91	ZAVISHA	Western north America	50.79	-123.41	6.49	1750.00	-1888.00	1819.00	680.83	1976-1985(15years)
92	HINTEREIS F.	Alps	46.80	10.77	6.39	1186.33	-2413.67	1800.00	754.18	2013-2018(6years)
93	CARESER ORIENTALE	Alps	46.45	10.70	1.43	881.33	-2689.67	1785.50	673.33	2006-2011(6years)
94	EKLUTNA WEST BRANCH	Western north America	61.23	-149.01	No record	1475.00	-2063.75	1769.38	763.31	2008-2015(8years)
95	SATUJOKULL	Iceland	64.92	-18.83	90.60	1623.00	-1905.00	1764.00	864.37	1988-1997(10years)
96	CARESER OCCIDENTALE	Alps	46.45	10.69	0.19	998.50	-2526.83	1762.67	669.56	2006-2011(6years)
97	DE LOS TRES	Andes	-49.33	-73.00	0.81	1575.29	-1931.29	1753.29	816.35	1996-2018(7years)
98	BRUARJOKULL	Iceland	64.67	-16.17	1525.00	1652.60	-1849.60	1751.10	781.48	1993-2017(15years)
99	YURI	Western north America	56.98	-130.68	3.58	1435.00	-2047.78	1741.39	610.58	1978-1990(10years)
100	TARFALAGLACIAEREN	Scandinavia	67.93	18.64	1.01	1647.70	-1834.55	1741.13	1090.38	1986-2015(20years)

NO.	Name	Region	Lat (°)	Log (°)	Area (km ²)	Abw (mm weq)	ABs (mm weq)	Aa (mm weq)	SBn (mm weq)	Observation periods (Year)
101	HOF SJOKULL N	Iceland	64.95	-18.92	73.70	1456.67	-2015.33	1736.00	674.11	1988-2017(15years)
102	KLEINFLEISS K.	Alps	47.05	12.95	0.79	1420.06	-2051.63	1735.84	658.00	2001-2017(16years)
103	KOLDUKVISLARJ.	Iceland	64.58	-17.83	300.00	1482.00	-1988.82	1735.41	848.55	1992-2017(17years)
104	GRIES	Alps	46.44	8.34	4.35	1322.98	-2121.77	1722.38	846.70	1962-2018(57years)
105	KARSOJIETNA	Scandinavia	68.36	18.32	1.23	1887.50	-1513.33	1700.42	351.82	1982-1993(8years)
106	MALAVALLE (VEDR. DI) / UEBELTALF.	Alps	46.95	11.19	6.03	1243.23	-2118.54	1680.88	485.17	2005-2017(13years)
107	JAMTAL F.	Alps	46.86	10.16	2.79	1188.04	-2171.54	1679.79	640.00	1989-2018(26years)
108	CARESER	Alps	46.45	10.71	0.96	991.94	-2350.28	1671.11	1084.43	1976-2018(18years)
109	ZETTALUNITZ/MULLWITZ K.	Alps	47.08	12.38	2.78	1221.42	-2101.75	1661.58	548.26	2007-2018(12years)
110	ALBIGNA	Alps	46.30	9.64	5.68	1385.00	-1906.83	1645.92	350.12	1955-1960(6years)
111	CIARDONEY	Alps	45.52	7.39	0.57	1166.35	-2067.50	1616.92	871.78	1992-2017(26years)
112	STORBREEN	Scandinavia	61.57	8.13	5.14	1416.35	-1770.28	1593.31	723.70	1949-2017(75years)
113	PLATTALVA	Alps	46.83	8.99	0.80	1530.08	-1643.55	1586.82	644.02	1948-1985(38years)
114	RHONE	Alps	46.62	8.40	15.52	1358.69	-1810.80	1584.74	525.81	1885-2017(35years)
115	MITTIVAKKAT	Greenland	65.70	-37.80	15.94	1203.08	-1950.00	1576.54	569.76	1996-2015(13years)
116	KESSJEN	Alps	46.07	7.93	0.45	1447.45	-1682.83	1565.14	692.44	1956-1995(40years)
117	FONTANA BIANCA / WEISSBRUNNF.	Alps	46.48	10.77	0.40	1116.13	-2006.23	1561.18	753.13	1984-2017(31years)
118	OCHSENTER G.	Alps	46.85	10.10	2.59	1311.71	-1795.43	1553.57	511.23	1992-1998(7years)
119	STORGLACIAEREN	Scandinavia	67.90	18.57	2.90	1418.90	-1677.89	1548.40	701.05	1946-2018(73years)
120	VERMUNT G.	Alps	46.85	10.13	2.16	1052.25	-2035.25	1543.75	527.75	1991-1998(8years)
121	DYNGJUJOKULL	Iceland	64.67	-17.00	1060.00	1615.57	-1440.86	1528.21	848.10	1992-2017(14years)
122	RIUKOJIETNA	Scandinavia	68.08	18.05	2.65	1255.12	-1798.50	1526.81	674.81	1986-2017(23years)
123	RIES OCC. (VEDR. DI) / RIESERF. WESTL.	Alps	46.90	12.10	1.70	1122.89	-1898.44	1510.67	684.87	2009-2017(9years)
124	LUNGA (VEDRETTE) / LANGENF.	Alps	46.47	10.62	1.60	970.46	-2047.46	1508.96	657.47	2004-2017(13years)
125	STORSTEINSFJELLBREEN	Scandinavia	68.22	17.92	5.91	1604.70	-1379.60	1492.15	598.45	1964-1995(10years)
126	LIMMERN	Alps	46.81	8.98	2.41	1385.08	-1574.63	1479.86	657.78	1948-1985(38years)
127	GULKANA	Western north America	63.28	-145.43	31.30	1163.22	-1758.20	1460.71	643.80	1966-2017(50years)
128	VENEDIGER K.	Alps	47.13	12.34	1.99	1141.00	-1779.20	1460.10	548.09	2013-2017(5years)
129	PEYTO	Western north America	51.66	-116.56	11.74	1129.32	-1784.29	1456.80	525.70	1966-2017(28years)
130	CORBASSIERE	Alps	45.98	7.29	15.08	1034.63	-1826.68	1430.66	514.11	1997-2017(19years)
131	SCHWARZBERG	Alps	46.02	7.93	5.10	1293.25	-1556.90	1425.08	797.20	1956-2017(60years)
132	SILVRETTA	Alps	46.85	10.08	2.62	1236.57	-1604.22	1420.40	783.83	1919-2018(100years)
133	AUSTRE MEMURUBREEN	Scandinavia	61.55	8.50	8.75	1064.40	-1746.80	1405.60	547.99	1968-1972(5years)
134	GIETRO	Alps	46.00	7.38	5.27	1193.71	-1595.78	1394.74	664.13	1967-2017(49years)
135	VESTRE MEMURUBREEN	Scandinavia	61.53	8.45	9.17	1156.80	-1597.60	1377.20	565.46	1968-1972(5years)
136	RABOTS GLACIAER	Scandinavia	67.91	18.50	3.13	1162.09	-1591.34	1376.72	632.12	1982-2017(32years)
137	LA MARE (VEDRETTE DE)	Alps	46.43	10.63	1.99	982.71	-1745.43	1364.07	654.26	2004-2017(14years)
138	FINDELEN	Alps	46.00	7.87	12.89	1083.40	-1601.60	1342.50	443.09	2005-2017(10years)
139	GRAASUBREEN	Scandinavia	61.66	8.60	2.12	1136.83	-1540.65	1338.74	622.41	1962-2017(56years)
140	MARMAGLACIAEREN	Scandinavia	68.08	18.68	3.31	1082.59	-1528.89	1305.74	562.78	1990-2017(27years)
141	HELLSTUGUBREEN	Scandinavia	61.56	8.44	2.90	1095.84	-1492.84	1294.34	664.96	1962-2017(56years)
142	GARABASHI	Caucasus	43.30	42.47	4.00	1106.18	-1457.12	1281.65	459.58	1984-2018(62years)
143	CONCONTA NORTE	Andes	-29.98	-69.65	0.10	534.83	-1978.83	1256.83	756.15	2008-2015(6years)
144	BROWN SUPERIOR	Andes	-29.98	-69.64	0.18	547.83	-1960.17	1254.00	700.13	2008-2015(7years)
145	GRAND ETRET	Alps	45.48	7.22	0.53	955.73	-1429.73	1192.73	635.90	2000-2015(11years)
146	PILOTO ESTE	Andes	-32.59	-70.14	No record	957.50	-1419.58	1188.54	860.47	1980-2003(24years)
147	ALLALIN	Alps	46.05	7.93	9.65	1094.57	-1275.15	1184.86	663.39	1956-2017(60years)
148	MURTEL VADRET DAL	Alps	46.41	9.82	0.30	935.40	-1404.80	1170.10	722.71	2013-2017(5years)
149	HANSBREEN	Svalbard	77.08	15.63	56.74	960.23	-1324.46	1142.35	371.34	1989-2017(26years)
150	VERNAGT F.	Alps	46.88	10.82	7.08	906.84	-1356.35	1131.60	522.87	1966-2017(51years)

NO.	Name	Region	Lat (°)	Log (°)	Area (km ²)	Abw (mm weq)	ABs (mm weq)	Aa (mm weq)	Sbn (mm weq)	Observation periods (Year)
151	GROSSER ALETSCHE	Alps	46.50	8.03	83.02	848.27	-1310.47	1079.37	615.05	1940-1999(60years)
152	RAM RIVER	Western north America	51.85	-116.48	1.80	891.11	-1211.11	1051.11	482.55	1966-1975(9years)
153	QAPIARFIUP SER.	Greenland	65.58	-52.21	20.85	1120.00	-962.00	1041.00	602.58	1981-1985(5years)
154	ADLER	Alps	46.01	7.87	1.98	823.44	-1210.67	1017.06	423.53	2009-2017(12years)
155	MARTIAL ESTE	Andes	-54.78	-68.40	0.09	934.75	-1041.00	987.88	576.28	2001-2017(16years)
156	AUSTRE LOVENBREEN	Svalbard	78.87	12.15	No record	688.64	-1196.55	942.59	420.88	2008-2018(11years)
157	VOERINGBREEN	Svalbard	78.04	13.95	No record	604.33	-1258.67	931.50	392.78	1974-1988(15years)
158	TS.TUYUKSUYSKIY	HMA (high mountain Asia)	43.05	77.08	2.26	696.87	-1147.27	922.07	505.29	1965-2017(52years)
159	AUSTRE BROEGGERBREEN	Svalbard	78.89	11.83	6.12	641.13	-1168.15	904.64	374.26	2008-2018(11years)
160	FREYA	Greenland	74.38	-20.82	5.30	748.29	-1059.86	904.07	581.18	2008-2017(7years)
161	MIDTRE LOVENBREEN	Svalbard	78.88	12.05	5.45	697.63	-1105.90	901.76	338.53	1976-2017(40years)
162	LEVIY AKTRU	HMA (high mountain Asia)	50.08	87.69	5.95	835.22	-954.35	894.78	355.01	1977-200(23years)
163	KARA-BATKAK	HMA (high mountain Asia)	42.14	78.27	2.47	504.70	-1244.91	874.80	336.24	1976-2018(23years)
164	MALIY AKTRU	HMA (high mountain Asia)	50.05	87.75	2.73	789.95	-874.20	832.08	435.53	1962-2009(44years)
165	BELLINGSHAUSEN	Antarctic	-62.17	-58.89	11.02	750.60	-900.20	825.40	422.21	2008-2012(5years)
166	SHUMSKIY	HMA (high mountain Asia)	45.08	80.23	2.81	442.12	-1129.33	785.73	456.05	1967-1991(26years)
167	WALDEMARBREEN	Svalbard	78.68	12.07	2.50	496.93	-1069.07	783.00	239.37	1996-2009(14years)
168	KONGSVEGEN	Svalbard	78.80	12.98	101.90	691.97	-777.53	734.75	368.91	1987-2017(30years)
169	GOLUBIN	HMA (high mountain Asia)	42.46	74.50	5.45	719.85	-720.91	720.38	339.97	1969-2018(34years)
170	JOHNSONS	Antarctic	-62.67	-60.35	5.36	785.00	-591.25	688.13	339.09	2002-2017(16years)
171	HURD	Antarctic	-62.69	-60.40	4.03	642.50	-685.63	664.06	423.02	2002-2017(16years)
172	SARY TOR (NO.356)	HMA (high mountain Asia)	41.83	78.17	2.64	424.78	-903.33	664.06	470.94	1985-2018(9years)
173	VALHALTINDE	Greenland	61.44	-45.32	1.90	496.00	-662.00	579.00	256.18	1979-1983(5years)
174	BATYSH SOOK/SYEK ZAPADNIY	HMA (high mountain Asia)	41.79	77.75	1.01	242.73	-863.82	553.27	300.64	1971-2018(11years)
175	KRONEBREEN	Svalbard	78.97	13.18	No record	500.00	-606.00	553.00	201.54	2013-2017(5years)
176	AMITSULOQ ICE CAP	Greenland	66.14	-50.32	198.00	494.33	-562.22	528.28	305.06	1982-1990(9years)
177	NORDENSKIOELDBREEN	Svalbard	78.70	17.18	No record	486.77	-552.31	519.54	256.52	2006-2018(13years)
178	GLACIER NO. 354 (AKSHIYRAK)	HMA (high mountain Asia)	41.80	78.15	6.38	251.38	-780.13	515.75	238.26	2011--2018(8years)
179	URUMQI GLACIER NO. 1 E-BRANCH	HMA (high mountain Asia)	43.11	86.81	1.02	124.19	-822.94	473.56	395.16	1996-2017(16years)
180	URUMQI GLACIER NO. 1 W-BRANCH	HMA (high mountain Asia)	43.12	86.80	0.57	138.70	-772.10	455.40	394.51	1996-2017(20years)
181	URUMQI GLACIER NO. 1	HMA (high mountain Asia)	43.12	86.81	1.59	172.79	-672.25	422.52	393.55	1989-2017(24years)
182	MELVILLE SOUTH ICE CAP	Arctic north America	75.40	-115.00	51.00	185.63	-540.58	363.10	433.28	1963-2017(43years)
183	MEIGHEN ICE CAP	Arctic north America	79.95	-99.13	58.00	171.92	-370.14	271.03	375.52	1960-2017(51years)
184	CHACALTAYA	Andes	-16.35	-68.13	0.03	17.60	-484.00	250.80	709.83	2000-2004(5years)
185	QIYI	HMA (high mountain Asia)	39.24	97.76	2.98	316.80	-124.80	220.80	185.52	1975-1985(5years)
186	DEVON ICE CAP NW	Arctic north America	75.42	-83.25	1688.00	115.43	-264.52	189.97	195.27	1961-2017(56years)
187	COMMONWEALTH	Dry Valley	-77.55	163.08	52.20	9.47	-19.26	14.37	36.75	1994-2012(23years)
188	HOWARD	Dry Valley	-77.76	163.51	8.30	-2.13	-8.39	5.26	32.25	1994-2012(19years)