

Site	Sample	Comments	Altitude (m)	Latitude (°)	Longitude (°)	TU	Ref.
South Pole	ice		2835	-90.0	139.3	32 ± 15	[1, 2]
Vostok	ice		3480	-78.5	106.8	60 ± 20	[3]
Ross Ice shelf	firn		10	-78.0	170.0	17 ± 3	[4]
Dome C	ice		3240	-75.1	123.4	25 ± 7	[2, 5]
Dronning Maud Land	ice		2680	-75.0	0.1	12.5 ± 7.5	[6]
Terre Adélie	ice		220	-66.7	140.0	7.5 ± 2.5	[7]
Kaitoke	rain		200	-41.1	175.2	1.7 ± 0.2	[8]
Kaitoke	rain	extrapolation	200	-41.1	175.2	1.9 ± 0.2	[8]
Easter Island	rain	extrapolation	41	-27.2	-109.4	< 1	[8]
Réunion Island	rain	extrapolation	70	-20.9	55.5	< 1	[8]
Honolulu	rain		10	21.2	-157.5	0.6 ± 0.1	[9]
Jerez de la Frontera (Spain)	wine		56	36.7	-6.1	3.1 ± 0.4	[10]
Naples (New York State)	wine		260	42.6	-77.4	5.8 ± 0.7	[10]
New York city	distilled water		10	40.7	-74.0	4.5 ± 0.2	[10]
Rhône Valley (France)	wine		125	45.1	4.9	3.8 ± 0.6	[10]
Gironde Valley (France)	wine		10	45.0	-0.6	4.4 ± 0.9	[10]
300km East of Thule	ice		2300	77.5	-69.3	12.6 ± 2.3	[11]
Vienna (Austria)	rain	extrapolation	180	48.2	16.4	6 ± 1	[8]
Central Europe	wine		500	48.0	12.0	5 ± 1.5	[12]
Chicago	rain		160	41.8	-87.6	6 ± 1	[13]
World ocean (surface)	seawater		0			1 ± 0.5	[14]
North Atlantic (surface)	seawater		0			0.2 ± 0.06	[15]
Mediterranean Sea (surface)	seawater		0			0.8	[16]

Table S1: Tritium data from pre-bomb measurements and extrapolation of GNIP series.

- [1] J. Jouzel, L. Merlivat, M. Pourchet, C. Lorius, A continuous record of artificial tritium fallout at the South Pole (1954-1978), *Earth and Planet. Sci. Lett.* 45 (1979) 188–200. doi:10.1016/0012-821X(79)90120-1.
- [2] J. Jouzel, L. Merlivat, D. Mazaudier, M. Pourchet, C. Lorius, Natural tritium deposition over Antarctica and estimation of the mean global production rate, *Geophys. Res. Lett.* 9 (1982) 1191–1194. doi:10.1029/GL009i010p01191.
- [3] E. Fourré, P. Jean-Baptiste, A. Dapoigny, D. Baumier, J.-R. Petit, J. Jouzel, Past and recent tritium levels in Arctic and Antarctic polar caps, *Earth and Planet. Sci. Lett.* 245 (2006) 56–64. doi:10.1016/j.epsl.2006.03.003.
- [4] S. P. Shen, S. A. Korff, H. A. C. Neuburg, Tritium Content of Antarctic Snow, *Nature* 199 (1963) 60–61. doi:10.1038/199060a0.
- [5] J. R. Petit, J. Jouzel, M. Pourchet, L. Merlivat, A detailed study of snow accumulation and stable isotope content in Dome C (Antarctica), *J. Geophys. Res.* 87 (1982) 4301–4308. doi:10.1029/JC087iC06p04301.
- [6] H. Oerter, W. Graf, F. Wilhelms, A. Minikin, H. Miller, Accumulation studies on Amundsenisen, Dronning Maud Land, by means of tritium, dielectric profiling and stable-isotope measurements: first results from the 1995-96 and 1996-97 field seasons, *Annals Glaciol.* 29 (1999) 1–9. doi:10.3189/172756499781820914.
- [7] J. Ravoire, C. Lorius, J. Robert, E. Roth, Tritium content in a firn core from Antarctica, *J. Geophys. Res.* 75 (12) (1970) 2331–2335. doi:10.1029/JC075i012p02331.
- [8] IAEA, International Atomic Energy Agency/World Meteorological Organization. Global Network of Isotopes in Precipitation (GNIP) Database., Accessible at: <http://www.iaea.org/water> (2015).
- [9] W. F. Libby, Tritium in Nature, *Scientific American* 190 (4) (1954) 38–42. doi:10.1038/scientificamerican0454-38.
- [10] W. F. Libby, Tritium in nature, *J. of Washington Academy of Sciences* 45 (1955) 301–314.

- [11] F. Begemann, New measurements on the worldwide distribution of natural and artificially produced tritium, in: Proc. 2nd Internat. Conf. on the Peaceful Uses of Atomic energy, Vol. 18, 1958, pp. 545–550.
- [12] W. Roether, Estimating the tritium input to groundwater from wine samples: Groundwater and direct run-off contribution to Central European surface waters, in: Isotopes in Hydrology, IAEA Proc. Series STI/PUB/141, 1967, pp. 73–79.
- [13] H. Craig, D. Lal, The production rate of natural tritium, *Tellus* 13 (1) (1961) 85–105. doi:10.1111/j.2153-3490.1961.tb00068.x.
- [14] F. Begemann, W. F. Libby, Continental water balance, ground water inventory and storage times, surface ocean mixing rates and worldwide water circulation patterns from cosmic-ray and bomb tritium, *Geochim. Cosmochim. Ac.* 12 (4) (1957) 277–296. doi:10.1016/0016-7037(57)90040-6.
- [15] E. Dreisigacker, W. Roether, Tritium and ^{90}Sr in North Atlantic surface water, *Earth and Planet. Sci. Lett.* 38 (2) (1978) 301–312. doi:10.1016/0012-821X(78)90104-8.
- [16] W. Roether, P. Jean-Baptiste, E. Fourré, J. Sültenfuß, The transient distributions of nuclear weapon-generated tritium and its decay product ^3He in the Mediterranean Sea, 1952-2011, and their oceanographic potential, *Ocean Science* 9 (5) (2013) 837–854. doi:10.5194/os-9-837-2013.