



# Records of Weather and Climate Extremes

As of 6 November 2023. Records that have been the subject of a formal World Meteorological Organization (WMO) evaluation are underlined. This table does not include a number of potential Records which are under evaluation.

## World weather and climate extremes

World weather element	World element characteristic	Value	Date (D/M/Y)	Site observations	Geopolitical location	Longitude/latitude	Elevation
Temperature	Highest temperature	<u>56.7 °C</u> (134 °F)	10/July/1913	1911–present	Furnace Creek (Greenland Ranch), CA, USA	36°27'N, 116°51'W	-54 m (-179 ft)
	Lowest temperature	<u>-89.2 °C</u> (-128.6 °F)	21/July/1983	1912–present	Vostok, Antarctica	77°32'S, 106°40'E	3 420 m (11 220 ft)
Pressure	Highest sea-level air pressure below 750 m	<u>1 083.8 hPa</u>	31/December/1968	1961–present	Agata, Russian Federation	66°53'N, 93°28'E	261 m (856.3 ft)
	Highest sea-level air pressure above 750 m	<u>1 089.1 hPa</u>	30/December/2004	1963–present	Tosontsengel Mongolia	48°44'N, 98°16'E	1 724.6 m (5 658.1 ft)
	Lowest sea-level air pressure (excluding tornadoes)	870 hPa	12/October/1979	1951–present	Eye of Typhoon Tip	16°44'N, 137°46'E	0 m
Rainfall	Greatest 1-min rainfall	31.2 mm (1.23 in.)	4/July/1956	1948–present	Unionville, MD, USA	38°48'N, 76°08'W	152 m (499 ft)
	Greatest 60-min rainfall	305 mm (12.0 in.)	22/June/1947		Holt, MO, USA	39°27'N, 94°20'W	263 m (863 ft)
	Greatest 12-hr rainfall	1.144 m (45.0 in.)	7–8/January/1966	1966–1990	Foc-Foc, La Réunion	21°14'S, 55°41'E	2 290 m (7 513 ft)
	Greatest 24-hr rainfall	1.825 m (71.8 in.)	7–8/January/1966	1966–1990	Foc-Foc, La Réunion	21°14'S, 55°41'E	2 290 m (7 513 ft)
	Greatest 48-hr rainfall	2.493 m (98.15 in.)	15–16/June/1995	1850–present	Cherrapunji, India	25°02'N, 91°08'E	1 313 m (4 308 ft)
	Greatest 72-hr rainfall	<u>3.930 m</u> (154.72 in.)	24–26/February/2007	1968–present	Cratère Commerson, La Réunion	21°12'S, 55°39'E	2 310 m (7 579 ft)
	Greatest 96-hr rainfall	<u>4.936 m</u> (194.33 in.)	24–27/February/2007	1968–present	Cratère Commerson, La Réunion	21°12'S, 55°39'E	2 310 m (7 579 ft)
	Greatest 12-mo. rainfall	26.47 m (1042 in.)	August/1860–July/1861	1851–present	Cherrapunji, India	25°02'N, 91°08'E	1 313 m (4 308 ft)
Hail	Heaviest hailstone	1.02 kg (2.25 lb)	14/April/1986		Gopalganj district, Bangladesh	23°00'N, 89°56'E	4 m (13.1 ft)
Aridity	Longest dry period	172 months	October/1903–January/1918		Arica, Chile	18°48'S, 70°30'W	65 m (213 ft)
Wind	Maximum gust	<u>113.2 m/s</u> (253 mph; 220 kt)	1055 UTC 10/April/1996	1932–present	Barrow Island Australia	20°49'S, 115°23'E	64 m (210 ft)
	Maximum gust for tropical cyclone	113.2 m/s (253 mph; 220 kt)	1055 UTC 10/April/1996	1949–present	Barrow Island Australia	20°49'S, 115°23'E	64 m (210 ft)
Lightning	Longest distance lightning flash	768 ± 8 km (477.2 ± 5 mi)	4:32:39.026 UTC -> 14:32:47.568 UTC on 29/4 (April)/2020	1/January/2018-present	Crossing between the states of Mississippi and Texas in the United States	30.83°N, 88.84°W to 28.69°S, 92.42°W	
	Longest duration lightning flash	17.102 ± 0.002 seconds	06:48:58.822 UTC - 06:49:15.924 UTC 18/6 (June)/2020	1/January/2018-present	Crossing portions of Argentina and Uruguay	36.25°S, 57.22°W to 31.68°S, 58.06°W	
Weather-related mortality	Highest mortality: Lightning	<u>469 individuals</u>	2/November/1994	1873–present	Dronka, Egypt	27.2°N, 31.0°W	
	Highest mortality: Lightning (single stroke)	<u>21 individuals</u>	23/December/1975	1873–present	Manica Tribal Trust Lands, Zimbabwe	18.30°S, 32.58°E	
	Highest Mortality: Tropical Cyclone	<u>Estimated 300 000 individuals</u>	12–13/November/1970	1873–present	Coastal Bangladesh	22.3°N, 91.8°E	
	Highest mortality: Tornado	<u>Estimated 1 300 individuals</u>	26/April/1989	1873–present	Manikganj district, Bangladesh	22.80°N, 90.1°E	
	Highest mortality: Hailstorm	<u>246 individuals</u>	20/April/1888	1873–present	Moradabad, India	28.80°N, 78.8°E	

## Hemispheric weather and climate extremes

Hemisphere	Continental element characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude	Elevation
Northern hemisphere	Highest temperature	56.7 °C (134 °F)	10/July/1913	1911–present	Furnace Creek (Greenland Ranch), CA, USA	36°27'N, 116°51'W	-54 m (-179 ft)
Southern hemisphere	Highest temperature	50.7 °C (123 °F)	2/January/1960	59 years	Oodnadatta, Australia	27°32'S, 135°26'E	112 m (367 ft)
Eastern hemisphere	Highest temperature	55.0 °C (131 °F)	7/July/1931	Unknown	Kebili, Tunisia	33°42'N, 8°58'E	38.1 m (125 ft)
Western hemisphere	Highest temperature	56.7 °C (134 °F)	10/July/1913	1911–present	Furnace Creek Ranch, CA, USA	36°27'N, 116°51'W	-54 m (-179 ft)
Northern hemisphere	Lowest temperature	-69.6 °C (-93.3 °F)	22/December/1991	1989–1994	Klinck AWS Greenland	72°18'N, 40°28'E	3 216 m (10 551 ft)
Southern hemisphere	Lowest temperature	-89.2 °C (-128.6 °F)	21/July/1983	1912–present	Vostok, Antarctica	77°32'S, 106°40'E	3 420 m (11 220 ft)
Eastern hemisphere	Lowest temperature	-89.2 °C (-128.6 °F)	21/July/1983	1912–present	Vostok, Antarctica	77°32'S, 106°40'E	3 420 m (11 220 ft)
Western hemisphere	Lowest temperature	<del>-69.6 °C (-93.3 °F)</del>	22/December/1991	1989–1994	Klinck AWS Greenland	72°18'N, 40°28'W	3 216 m (10 551 ft)
Northern hemisphere	24-hour rainfall	<u>1 633.98 mm (64.3 in.)</u>	21–22/November/2005		Isla Mujeres, Mexico	21°15'N, 86°44'W	3 m (10 ft)
Southern hemisphere	24-hour rainfall	1 825 mm (72.0 in.)	7–8/January/1966	1966–1990	Foc-Foc, La Reunion	21°14'S, 55°40'E	2 990 m (9 810 ft)
Eastern hemisphere	24-hour rainfall	1 825 mm (72.0 in.)	7–8/January/1966	1966–1990	Foc-Foc, La Reunion	21°14'S, 55°40'E	2 990 m (9 810 ft)
Western hemisphere	24-hour rainfall	1 633.98 mm (64.3 in.)	21–22/October/2005		Isla Mujeres, Mexico	21°15'N, 86°44'W	3 m (10 ft)
Eastern hemisphere	Heaviest hailstone	1.02 kg (2.25 lb)	14/April/1986		Gopalganj district, Bangladesh	23°00'N, 89°56'E	4 m (13.1 ft)
Western hemisphere	Heaviest hailstone	0.88 kg (1.94 lb)	23/July/2010		Vivian, South Dakota	43°55'N, 100°17'W	581 m (1 907 ft)
Northern hemisphere	Maximum wind gust	103.3 m/s (231 mph)	12/April/1934	1932–present	Mt. Washington NH USA	44°16'N, 71°18'W	1 856 m (6 089 ft)
Southern hemisphere	Maximum wind gust	113.2 m/s (253 mph; 220 kt)	10/April/1996	1932–present	Barrow Island Australia	20°49'S, 115°23'E	64 m (210 ft)
Eastern hemisphere	Maximum wind gust	113.2 m/s (253 mph; 220 kt)	10/April/1996	1932–present	Barrow Island Australia	20°49'S, 115°23'E	64 m (210 ft)
Western hemisphere	Maximum wind gust	103.3 m/s (231 mph)	12/April/1934	1932–present	Mt. Washington NH USA	44°16'N, 71°18'W	1 856 m (6 089 ft)

## Continental weather and climate extremes: based on WMO defined regions

WMO region	Continental element characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude	Elevation
WMO Region I: Africa	Highest temperature	55.0 °C (131 °F)	7/July/1931	Unknown	Kebili, Tunisia	33°42'N, 8°58'E	38.1 m (125 ft)
WMO Region II: Asia	Highest temperature	<u>53.9 °C</u> <u>±0.1 °C</u> <u>(129.0 °F</u> <u>±0.2 °F)</u>	21/July/2016		Mitribah, Kuwait	29°N 49'28', 47°E 21'35'	119.56 m (398 ft)
WMO Region II: Asia	Highest temperature	<u>53.7 °C</u> <u>±0.4 °C</u> <u>(128.7 °F</u> <u>±0.7 °F)</u>	28/May/2017		Turbat Pakistan	25°59'N; 63°04'E	151 m (495 ft)
WMO Region III: South America	Highest temperature	48.9 °C (120 °F)	11/December/1905		Rivadavia, Argentina	24°10'S, 62°54'W	205 m (672.6 ft)
WMO Region IV: North America	Highest temperature	56.7 °C (134 °F)	10/July/1913	1911–present	Furnace Creek Ranch, CA, USA	36°28'N, 116°51'W	-54 m (-179 ft)
WMO Region V: Southwest Pacific	Highest temperature	50.7 °C (123 °F)	2/January/1960	59 years	Oodnadatta, Australia	27°32'S, 135°26'E	112 m (367 ft)
WMO Region VI: Europe (including Middle East/Greenland)	Highest temperature	54 °C (129 °F)	21/June/1942		Tirat Tsvi (Tirat Zevi) Israel	32°25'N, 35°32'E	-220 m (-722 ft)
WMO Region VI: Europe (Continental)	Highest temperature	48.0 °C (118.4 °F)	10/July/1977	1956–present	Athens, Greece (and Elefsina, Greece)	38°06'N, 23°47'E	236 m (774 ft)
Arctic Circle (>66.5°N)	Highest temperature	<u>38.0 °C</u> <u>(100.4 °F)</u>	20/June/2020	1953–present	Verkhoyansk; Russian Federation	67.50°N; 134.66°E;	138 m (452.8 ft)
Antarctic region (all land/sea south of 60°S)	Highest temperature	<u>19.8 °C</u> <u>(67.6 °F)</u>	30/January/1982	1947–present (summer only: 1996 on)	Signy Research Station (UK)	60°43'S, 45°36'W	7 m (23.0 ft)
Antarctic region (mainland & adjoining islands)	Highest temperature	<u>18.3 °C</u> <u>(64.9 °F)</u>	6/February/2020	1953–present	Esperanza Research Station (Argentina)	63°24'S, 56°59'W	24 m (78.7 ft)
Antarctic region (plateau>2500 m)	Highest temperature	<u>-7.0 °C</u> <u>(19.4 °F)</u>	28/December/1989	14/January / 1983 to 1/January/2001	AWS D-80 inland of the Adélie Coast	70°6' S, 134°53'E	2 500 m (8 202 ft)
WMO Region I: Africa	Lowest temperature	-23.9 °C (-11 °F)	11/February/1935	1912–present	Ifrane, Morocco	33°30'N, 5°06'W	1 635 m (5 364 ft)
WMO Region II: Asia	Lowest temperature	-67.8 °C (-90 °F)	a) 5/February/1892 and 7/February/1892 b) 6/February/1933		a) Verkhoyansk, Russian Federation b) Oimaykon, Russian Federation	67°33'N, 133°23'E and 63°28'N, 142°23'E	107 m (350 ft) and 800 m (2 625 ft)
WMO Region III: South America	Lowest temperature	-32.8 °C (-27 °F)	1/June/1907		Sarmiento, Argentina	54°21'S, 68°11'W	268 m (879 ft)
WMO Region IV: North America	Lowest temperature	-63.0 °C (-81.4 °F)	3/February/1947	1943–1966	Snag, Yukon Territory, Canada	140°22'W, 62°23'N	646 m (2 120 ft)
WMO Region V: South-West Pacific	Lowest temperature	<u>-25.6 °C</u> <u>(-14.0 °F)</u>	17/July/1903	1897–present	Ranfurlly, New Zealand	45°08'S, 170°06'E	423 m (1 388 ft)
WMO Region V: South-West Pacific (Australia only)	Lowest temperature	-23 °C (-9.4 °F)	29/June/1994		Charlotte Pass, New South Wales	36°31'S, 148°19'E	1 755 m (5 758 ft)
WMO Region VI: Europe (including Middle East/Greenland)	Lowest temperature	-69.6 °C (-93.3 °F)	22/December/1991	1989–1994	Klinck AWS Greenland	72°18'N, 40°28'E	3 216 m (10 551 ft)
WMO Region VI: Europe (Continental)	Lowest temperature	-58.1 °C (-72.6 °F)	31/December/1978		Ust 'Schugor, Russian Federation	57°45'E, 64°15'N	85 m (279 ft)
Antarctic Region	Lowest temperature	-89.2 °C (-128.6 °F)	21/July/1983	1912–present	Vostok, Antarctica	77°32'S, 106°40'E	3 420 m (11 220 ft)
WMO Region I: Africa	Greatest precipitation (average annual)	10.287 m (405.0 in.)		32 years	Debundscha, Cameroon	4°06'N, 8°59'E	9 m (30 ft)
WMO Region II: Asia	Greatest precipitation (average annual)	11.872 m (467.4 in.)		38 years	Mawsynram, India	25°18'N, 91°35'E	1 431 m (4 695 ft)
WMO Region III: South America	Greatest precipitation (average annual)	8.99 m (354.0 in.)		29 years	Quibdo, Colombia	5°41'N, 76°40'W	70 m (230 ft)
WMO Region IV: North America	Greatest precipitation (average annual)	7 m (276 in.)	1923–1935; 1998–2000	15 years	Henderson Lake, BC, Canada	49°88'N, 125°08'W	3.66 m (12 ft)
WMO Region V: South-West Pacific	Greatest precipitation	11.64 m (460.0 in.)		30 years	Mt. Waialeale, Kauai, Hawaii, USA	22°04'N, 159°29'W	1 569 m (5 148 ft)

WMO region	Continental element characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude	Elevation
	(average annual)						
WMO Region V: South-West Pacific (Australia only)	Greatest precipitation (average annual)	8.034 m (316.3 in.)		34 years	Bellenden Ker, Queensland, Australia	17°16'S, 145°51'E	1 555 m (5 102 ft)
WMO Region VI: Europe	Greatest precipitation (average annual)	4.593 m (180.8 in.)	1961–1990	30 years	Crkvice, Montenegro	43°00'N, 18°30'E	1 055 m (3 461 ft)
Antarctic region	Greatest precipitation (average annual)	>800 mm (31.5 in.) water equivalent (460.0 in.)		July 1996– June 1999	Along the coast of East and West Antarctica, and over the Antarctic Peninsula		
WMO Region I: Africa	Least precipitation (average annual)	< 2.54 mm (< 0.1 in.)		39 years	Wadi Halfa, Sudan	21°47'N, 31°22'E	180 m (590 ft)
WMO Region II: Asia	Least precipitation (average annual)	45.7 mm (1.8 in.)		50 years	Aden, Yemen	12°45'N, 45°4'E	19 m (63 ft)
WMO Region III: South America	Least precipitation (average annual)	0.76 mm (0.03 in.)		59 years	Arica, Chile	18°29'S, 70°18'W	65 m (213 ft)
WMO Region IV: North America	Least precipitation (average annual)	30.5 mm (1.2")		14 years	Batagues, Mexico	32°33'N, 115°04'W	21 m (69 ft)
WMO Region V: South-West Pacific	Least precipitation (average annual)	102.9 mm (4.05 in.)		42 years	Troudaninna, South Australia	29°03'S, 139°10'E	14 m (46 ft)
WMO Region VI: Europe (continental)	Least precipitation (average annual)	162.6 mm (6.4 in.)		25 years	Astrakhan, Russian Federation	46°22'N, 48°00'E	20 m (66 ft)
Antarctic region	Least precipitation (average annual)	2 mm (0.08 in.)		10 years	Amundsen-Scott South Pole Station	90°S	2 835 m (9 301 ft)

## World tornado Records

Tornado characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude	Elevation
Highest mortality: tornado	Estimated 1 300 individuals	26 /April /1989	1873–present	Manikganj district, Bangladesh	22.80°S; 90.1°E	
Longest-lasting/greatest distance travelled (single tornado)	352.4 km (219 mi)/ 3.5 hours duration	18/March/1925		Ellington MO USA to Princeton in USA		
Biggest (numerical) tornado outbreak	209 tornadoes	27/April/2011	1787–present	South-eastern United States		
Widest tornado (maximum diameter)	4 184 m (2.6 mi) in width	31/ 5 (May) 2011		El Reno Oklahoma EF5 Tornado	35°31'N, 97°57'W	4 184 m (2.6 mi)
Calendar month with greatest number of tornadoes	543 tornadoes	May/2003	1950–present	USA		
Highest recorded tornadic wind speed	135 m/s (302 mph)	3/5 (May)/1999	~1996–present	Bridge Creek, OK USA	35°14'N, 97°44'W	416 m (1 365 ft)
Longest tornado transport	A personal check carried 359 km (223 mi)	11/4 (April)/1991	1871–present	Stockton, KS USA to Winnetoon, NE USA		

## World tropical cyclone Records

Tropical cyclone characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude
Highest mortality: tropical cyclone	Estimated 300 000 individuals	12–13/November/1970	1873–present	Coastal Bangladesh	22.3°N; 91.8°W
Most intense - by central pressure (world and eastern hemisphere)	870 mb (25.69 in.)	12/October/1979	1951–present	Typhoon Tip in the north-west Pacific Ocean	16°44'N, 137°46'E
Most intense - by central pressure (western hemisphere)	872 mb (25.75 in.)	1200 UTC 23/October/2015	1951–present	Hurricane <i>Patricia</i> in the eastern Pacific Ocean	17°18'N, 105°47'W
Most intense - by maximum sustained surface wind (tie)	95 m/s (185 kt, 215 mph)	12/September/1961	1945–present	Typhoon <i>Nancy</i> in the north-west Pacific Ocean	15°30'N, 137°30'E
Most intense - by maximum sustained surface wind (tie)	95 m/s (185 kt, 215 mph)	1200 UTC 23/October/2015	1951–present	Hurricane <i>Patricia</i> in the eastern Pacific Ocean	17°18'N, 105°47'W
Maximum surface wind gust for tropical cyclone	113.2 m/s (253 mph; 220 kt)	1055 UTC 10/April/1996	1949–present	Barrow Island, Australia	20°49'S, 115°23'E
Fastest intensification	100 mb (976 to 876 mb) in just under 24 hours	22–23/September/1983	1951–present	Typhoon <i>Forrest</i> in the north-west Pacific Ocean	18°0'N, 136°0'E
Highest storm surge	13 m (42 ft)	5/March/1899		Tropical Cyclone <i>Mahina</i> ; Bathurst Bay, Queensland, Australia	14°15'S, 144°23'E
First identified South Atlantic hurricane		28/March/2004	1966–present	Tropical Cyclone <i>Catarina</i> ; state of Santa Catarina, Brazil	Approximately 27°S, 48°W
Largest tropical cyclone (winds from centre)	Gale winds [17 m/s, 34 kt, 39 mph] extending 1 100 km (675 mi) from centre	12/October/1979	1945–present	Typhoon Tip in the north-west Pacific Ocean	16°44'N, 137°46'E
Smallest tropical cyclone (winds from centre)	Gale winds [17 m/s, 34 kt, 39 mph] extending 50 km (30 mi) from centre	24/December/1974	1956–present	Tropical Cyclone <i>Tracy</i> near Darwin, Australia	12°12'S, 130°00'E
Longest lasting tropical cyclone	31 days	10/August/1994–10/September/1994	1945–present	Hurricane/ Typhoon <i>John</i> in the north-east and north-west Pacific basins	

Tropical cyclone characteristic	Value	Date (D/M/Y)	Length of record	Geopolitical location	Longitude/latitude
Longest distance travelled by tropical cyclone	13 180 km (8 189.7 mi, 7 166.6 naut. mi)	10/August/1994–10/September/1994	1961–present (satellite era)	Hurricane/Typhoon <i>John</i> in the north-east and north-west Pacific basins	
Smallest eye	6.7 km (4 mi)	24/December/1974	1956–present	Tropical Cyclone <i>Tracy</i> at Darwin Australia	12°12'S, 130°00'E
Largest eye	90 km (56 mi)	21/February/1979	1956–present	Tropical Cyclone <i>Kerry</i> , Coral Sea	17°30'S, 154°06'W

Largest rainfall of tropical cyclones	Value	Date (D/M/Y)	Length of record	Tropical cyclone	Latitude/longitude	
Accumulation time period	12 hr	1.144 m (45.0 in.)	7–8/January/1966	1966–1990	Tropical Cyclone <i>Denise</i> in the South Indian Ocean	21°14'S, 55°41'E
	24 hr	1.825 m (71.8 in.)	7–8/January/1966	1966–1990	Tropical Cyclone <i>Denise</i> in the South Indian Ocean	21°15'S, 55°40'E
	48 hr	2.467 m (97.1 in.)	7–9/April/1958	1968–present	Unnamed Tropical Cyclone in the South Indian Ocean	21°00'S, 55°26'E
	72 hr	3.930 m (154.72 in.)	24–27/February/2007	1968–present	Tropical Cyclone <i>Gamede</i> in the South Indian Ocean	21°12'S, 55°39'E
	96 hr	4.936 m (194.33 in.)	24–28/February/2007	1968–present	Tropical Cyclone <i>Gamede</i> in the South Indian Ocean	21°12'S, 55°39'E
	10-day	5.678 m (223.5 in.)	18–27/January/1980	1968–present	Tropical Cyclone <i>Hyacinte</i> in the South Indian Ocean	21°12'S, 55°39'E

## World meteorological-related phenomena Records

Phenomena Characteristic	Value	Date (D/M/Y)	Length of Record	Geopolitical Location	Longitude/Latitude	Elevation
World's highest significant wave height by ship observation	18.5 m (60.7 ft)	2214 UTC 8/February/2000		North Atlantic	57°30'N, 12°42'W	0 m (0 ft)
World's highest significant wave height by buoy	19.0 m (62.3 ft)	0600 UTC 4/February/2013		North Atlantic	59°07'N, 11°42'W	0 m (0 ft)