

# World Meteorological Organization

## Global Weather & Climate Extremes

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### On-going Investigations:

World Extreme Highest Adjusted Sea Level Pressure (Above 750 meters) Record  
Widest Tornado (maximum diameter) Record

### Weather & Climate Extremes News:

New WMO Biggest (Numerical) Tornado Outbreak: [209 tornadoes occurring on 27 April 2011 over Southeast United States](#)

New WMO World Extreme Highest Global Temperature: An international evaluation panel of meteorologists have disqualified the long-held 58°C temperature recorded on 13 September 1922 in El Azizia, Libya due to five primary concerns: (a) problematical instrumentation, (b) a likely inexperienced observer, (c) an observation site over an asphalt-like material which was not representative of the native desert soil, (d) poor matching of the extreme to other nearby locations and (e) poor matching to subsequent temperatures

recorded at the site. The new record, Greenland Ranch (Furnace Creek), Death Valley California, USA, is 56.7°C (134°F) and measured on 10 July 1913. The official WMO press release is given at:

[http://www.wmo.int/pages/mediacentre/press\\_releases/pr\\_956\\_en.html](http://www.wmo.int/pages/mediacentre/press_releases/pr_956_en.html)

**New WMO World Extreme Highest Adjusted Sea Level Pressure (Above 750 meters) Record:**

1084.4 hPa (millibars) on 19 December 2001 at Tosontsengel Mongolia

**New IPCC Report on Climate Extremes**

**Available at <http://www.ipcc-wg2.gov/SREX/>**

**New WMO World Extreme Wind Gust Record:**

408 km/h during Tropical Cyclone Olivia on 10 April 1996 at Barrow Island, Australia

Official WMO announcement: see [http://www.wmo.int/pages/mediacentre/infonotes/info\\_58\\_en.html](http://www.wmo.int/pages/mediacentre/infonotes/info_58_en.html)



## WMO Weather & Climate Extremes Map

| World Weather Element | World Element Characteristic                             | Value              | Date (D/M/Y) | Site Observations |
|-----------------------|--|--------------------|--------------|-------------------|
| TEMPERATURE           | <u>Highest Temp</u>                                      | 56.7°C (134°F)     | 10/7/1913    | 1911- present     |
|                       | <u>Lowest Temp</u>                                       | -89.2°C (-128.5°F) | 21/7/1983    | 1912- present     |
| PRESSURE              | <u>Highest Sea Lvl Air Pressure Below 750m</u>           | 1083.8 hPa         | 31/12/1968   | 1961- present     |
|                       | <u>Highest Sea Lvl Air Pressure Above 750m</u>           | 1084.8 hPa         | 19/12/2001   | 1963- present     |
|                       | <u>Lowest Sea Lvl Air Pressure (excluding tornadoes)</u> | 870 hPa            | 12/10/1979   | 1951- present     |
| RAINFALL              | <u>Greatest 1-Min Rainfall</u>                           | 31.2mm (1.23")     | 4/7/1956     | 1948- present     |

| World Weather Element | World Element Characteristic             | Value                       | Date (D/M/Y)       | Site Observations        |
|-----------------------|--|-----------------------------|--------------------|--------------------------|
|                       | <u>Greatest 60-Min Rainfall</u>          | 305mm (12.0")               | 22/6/1947          |                          |
|                       | <u>Greatest 12-Hr Rainfall</u>           | 1.144 m (45.0")             | 7-8/1/1966         | 1966-1990                |
|                       | <u>Greatest 24-Hr Rainfall</u>           | 1.825m (71.8")              | 7-8/1/1966         | 1966-1990                |
|                       | <u>Greatest 48-Hr Rainfall</u>           | 2.467m (97.1")              | 7-9/4/1958         | 1952-1980 / 2004-present |
|                       | <u>Greatest 72-Hr Rainfall</u>           | 3.929m (154.7")             | 24-26/2/2007       | 1968-present             |
|                       | <u>Greatest 96-Hr Rainfall</u>           | 4.869m (191.7")             | 24-27/2/2007       | 1968-present             |
|                       | <u>Greatest 12-Mo Rainfall</u>           | 26.47m (1042")              | 8/1860-7/1861      | 1851- present            |
| HAIL                  | <u>Heaviest Hailstone</u>                | 1.02kg (2.25lb)             | 14/4/1986          |                          |
| ARIDITY               | <u>Longest Dry Period</u>                | 173 months                  | 10/1903-1/1918     |                          |
| WIND                  | <u>Maximum Gust</u>                      | 113.2m/s<br>(253mph; 220kt) | 1055 UTC 10/4/1996 | 1932- present            |
|                       | <u>Maximum Gust for Tropical Cyclone</u> | 113.2m/s<br>(253mph; 220kt) | 1055 UTC 10/4/1996 | 1949-present             |

## Hemispheric Weather & Climate Extremes

| Continent/ Hemisphere | Continental Element Characteristic | Value          | Date (D/M/Y) | Length of Record |
|-----------------------|------------------------------------|----------------|--------------|------------------|
| NORTHERN HEMISPHERE   | <u>Highest Temperature</u>         | 56.7°C (134°F) | 10/7/1913    | 1911- present    |
| SOUTHERN HEMISPHERE   | <u>Highest Temperature</u>         | 50.7°C (123°F) | 2/1/1960     | 59 years         |
| EASTERN HEMISPHERE    | <u>Highest Temperature</u>         | 54°C (129.2°F) | 21/6/1942    |                  |
| WESTERN HEMISPHERE    | <u>Highest Temperature</u>         | 56.7°C (134°F) | 10/7/1913    | 1911- present    |

| Continent/ Hemisphere | Continental Element Characteristic | Value                       | Date (D/M/Y)                         | Length of Record |
|-----------------------|------------------------------------|-----------------------------|--------------------------------------|------------------|
| NORTHERN HEMISPHERE   | <u>Lowest Temperature</u>          | -67.8°C (-90°F)             | 1. 5/2/1892, 7/2/1892<br>2. 6/2/1933 |                  |
| SOUTHERN HEMISPHERE   | <u>Lowest Temperature</u>          | -89.2°C (-129°F)            | 21/7/1983                            | 1912-present     |
| EASTERN HEMISPHERE    | <u>Lowest Temperature</u>          | -89.2°C (-129°F)            | 21/7/1983                            | 1912-present     |
| WESTERN HEMISPHERE    | <u>Lowest Temperature</u>          | -66.1°C (-87°F)             | 9/1/1954                             | 11/1952-6/1954   |
| NORTHERN HEMISPHERE   | <u>24-hour Rainfall</u>            | 1633.98mm<br>(64.3")        | 21-22/10/2005                        |                  |
| SOUTHERN HEMISPHERE   | <u>24-hour Rainfall</u>            | 1825mm (72.0")              | 7-8/1/1966                           | 1966-1990        |
| EASTERN HEMISPHERE    | <u>24-hour Rainfall</u>            | 1825mm (72.0")              | 7-8/1/1966                           | 1966-1990        |
| WESTERN HEMISPHERE    | <u>24-hour Rainfall</u>            | 1633.98mm<br>(64.3")        | 21-22/10/2005                        |                  |
| NORTHERN HEMISPHERE   | <u>Maximum Wind Gust</u>           | 103.3 m/s (231<br>mph)      | 12/4/1934                            | 1932-present     |
| SOUTHERN HEMISPHERE   | <u>Maximum Wind Gust</u>           | 112.3m/s<br>(253mph; 220kt) | 10/4/1996                            | 1932- present    |
| EASTERN HEMISPHERE    | <u>Maximum Wind Gust</u>           | 112.3m/s                    | 10/4/1996                            | 1932- present    |

| Continent/ Hemisphere | Continental Element Characteristic | Value               | Date (D/M/Y) | Length of Record |
|-----------------------|------------------------------------|---------------------|--------------|------------------|
|                       |                                    | (253mph; 220kt)     |              |                  |
| WESTERN HEMISPHERE    | <u>Maximum Wind Gust</u>           | 103.3 m/s (231 mph) | 12/4/1934    | 1932-present     |

## Continental Weather & Climate Extremes

|               |                            |                   |                       |               |
|---------------|----------------------------|-------------------|-----------------------|---------------|
| NORTH AMERICA | <u>Highest Temperature</u> | 56.7°C (134°F)    | 10/7/1913             | 1911- present |
| SOUTH AMERICA | <u>Highest Temperature</u> | 48.9°C (120°F)    | 11/12/1905            |               |
| EUROPE        | <u>Highest Temperature</u> | 48.0°C (118.4°F)  | 10/7/1977             | 1956-present  |
| ASIA          | <u>Highest Temperature</u> | 54°C (129.2°F)    | 21/6/1942             |               |
| AFRICA        | <u>Highest Temperature</u> | 55.0°C (131°F)    | 7/7/1931              | unknown       |
| AUSTRALIA     | <u>Highest Temperature</u> | 50.7°C (123°F)    | 2/1/1960              | 59 years      |
| OCEANIA       | <u>Highest Temperature</u> | 42.2°C (108°F)    | 29/4/1912             |               |
| ANTARCTICA    | <u>Highest Temperature</u> | 15°C (59°F)       | 1/5/1974              |               |
| NORTH AMERICA | <u>Lowest Temperature</u>  | -63.0°C (-81.4°F) | 3/2/1947              | 1943-1966     |
| SOUTH AMERICA | <u>Lowest Temperature</u>  | -32.8°C (-27°F)   | 1/6/1907              |               |
| EUROPE        | <u>Lowest Temperature</u>  | -58.1°C (-72.6°F) | 31/12/1978            |               |
| AFRICA        | <u>Lowest Temperature</u>  | -23.9°C (-11°F)   | 11/2/1935             | 1912-present  |
| AUSTRALIA     | <u>Lowest Temperature</u>  | -23°C (-9.4°F)    | 29/6/1994             |               |
| ANTARCTICA    | <u>Lowest Temperature</u>  | -89.2°C (-129°F)  | 21/7/1983             | 1912-present  |
| ASIA          | <u>Lowest Temperature</u>  | -67.8°C (-90°F)   | 1. 5/2/1892, 7/2/1892 |               |



|               |  |  |                      |                   |
|---------------|--|--|----------------------|-------------------|
|               |  |  | 2. 6/2/1933          |                   |
| SOUTH AMERICA | <u>Greatest Precipitation (average annual)</u> | 8.99 m (354.0")                                |                      | 29 years          |
| ASIA          | <u>Greatest Precipitation (average annual)</u> | 11.872m (467.4")                               |                      | 38 years          |
| AFRICA        | <u>Greatest Precipitation (average annual)</u> | 10.287m (405.0")                               |                      | 32 years          |
| AUSTRALIA     | <u>Greatest Precipitation (average annual)</u> | 8.034m (316.3")                                |                      | 34 years          |
| NORTH AMERICA | <u>Greatest Precipitation (average annual)</u> | 7m (276")                                      | 1923-1935; 1998-2000 | 15 years          |
| EUROPE        | <u>Greatest Precipitation (average annual)</u> | 4.648m (183.0")                                |                      | 22 years          |
| ANTARCTICA    | <u>Greatest Precipitation (average annual)</u> | >800mm (31.5")<br>water equivalent<br>(460.0") |                      | Jul 1996–Jun 1999 |
| OCEANIA       | <u>Greatest Precipitation (average annual)</u> | 11.64m (460.0")                                |                      | 30 years          |
| SOUTH AMERICA | <u>Least Precipitation (average annual)</u>    | 0.76mm (0.03")                                 |                      | 59 years          |
| ASIA          | <u>Least Precipitation (average annual)</u>    | 45.7mm (1.8")                                  |                      | 50 years          |
| AFRICA        | <u>Least Precipitation (average annual)</u>    | < 2.54mm (< 0.1")                              |                      | 39 years          |

|               |   |                 |  |           |
|---------------|---|-----------------|--|-----------|
| AUSTRALIA     | <a href="#"><u>Least Precipitation (average annual)</u></a> | 102.9mm (4.05") |  | 42 years  |
| NORTH AMERICA | <a href="#"><u>Least Precipitation (average annual)</u></a> | 30.5 mm (1.2")  |  | 14 years  |
| EUROPE        | <a href="#"><u>Least Precipitation (average annual)</u></a> | 162.6mm (6.4")  |  | 25 years  |
| ANTARCTICA    | <a href="#"><u>Least Precipitation (average annual)</u></a> | 2mm (0.08")     |  | 10 years  |
| OCEANIA       | <a href="#"><u>Least Precipitation (average annual)</u></a> | 188mm (7.41")   |  | 1972-1982 |

## World Tornado Records

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| Tornado Characteristic   | Value                                    | Date (D/M/Y) | Length of Record | Geopolitical Location                |
|--|--|--------------|------------------|--------------------------------------|
| <a href="#"><u>World's Deadliest Single Tornado</u></a>                              | 1,300 killed / 12,000 injured            | 26/4/1989    | 1091- present    | Manikganj District Bangladesh        |
| <a href="#"><u>Longest-lasting / Greatest Distance Traveled (single tornado)</u></a> | 352.4km (219 miles) / 3.5 hours duration | 18/3/1925    |                  | Ellington MO USA to Princeton IN USA |
| <a href="#"><u>Biggest (Numerical) Tornado Outbreak</u></a>                          | 209 Tornadoes                            | 27/4/2011    | 1787- present    | Southeastern United States           |
| <a href="#"><u>Widest Tornado (maximum</u></a>                                       | Nearly 4000m (2.5 mi.) in width          | 22/5/2004    |                  | Hallam, NE F4 Tornado                |

| <b>Tornado Characteristic</b>   | <b>Value</b>                              | <b>Date (D/M/Y)</b> | <b>Length of Record</b> | <b>Geopolitical Location</b>          |
|---|---|---------------------|-------------------------|---------------------------------------|
| <a href="#"><u>diameter)</u></a>  |   |                     |                         |                                       |
| <a href="#"><u>Calendar Month with Greatest number of Tornadoes</u></a> | 543 tornadoes                             | 5/2003              | 1950- present           | United States                         |
| <a href="#"><u>Highest Recorded Tornadoic Wind Speed</u></a>            | 135m/s (302 mph)                          | 3/5/1999            | ~1996- present          | Bridge Creek, OK USA                  |
| <a href="#"><u>Longest Tornado Transport</u></a>                        | A personal check carried 359 km (223 mi.) | 11/4/1991           | 1871- present           | Stockton, KS USA to Winnetoon, NE USA |

World Tropical Cyclone Records

| <b>Tropical Cyclone Characteristic</b>   | <b>Value</b>            | <b>Date (D/M/Y)</b> | <b>Length of Record</b> |
|--|-------------------------|---------------------|-------------------------|
| <a href="#"><u>Most Intense - by Central Pressure (World and Eastern Hemisphere)</u></a> | 870mb (25.69")          | 12/10/1979          | 1951- present           |
| <a href="#"><u>Most Intense - by Central Pressure (western hemisphere)</u></a>           | 882mb (26.05")          | 19/10/2005          | 1951- present           |
| <a href="#"><u>Most Intense - by Maximum Sustained Surface Wind</u></a>                  | 95m/s (185 kt, 215 mph) | 12/9/1961           | 1945- present           |

| <b>Tropical Cyclone Characteristic</b>  | <b>Value</b>   | <b>Date (D/M/Y)</b> | <b>Length of Record</b> |
|---|--|---------------------|-------------------------|
| <b><u>Maximum Surface Wind Gust for Tropical Cyclone</u></b>                      | 113.2 m/s (253mph; 220 kt)   | 1055 UTC, 10/4/1996 | 1949-present            |
| <b><u>Northern Hemispheric Maximum Surface Wind Gust for Tropical Cyclone</u></b> | 94.4 m/s (211.3 mph; 183.5 kt)   | 2235 UTC, 30/9/2008 | 1949-present            |
| <b><u>Fastest Intensification</u></b>   | 100mb (976 to 876 mb) in just under 24 hours                           | 22-23/9/1983        | 1951- present           |
| <b><u>Highest Storm Surge</u></b>   | 13m (42 feet)  | 5/3/1899            |                         |
| <b><u>First Identified South Atlantic Hurricane</u></b>                           |  | 28/3/2004           | 1966-present            |
| <b><u>Largest Tropical Cyclone (winds from center)</u></b>                        | Gale winds [17m/s, 34 kt, 39mph] extending 1100km (675 mi) from center | 12/10/1979          | 1945- present           |
| <b><u>Smallest Tropical Cyclone (winds from center)</u></b>                       | Gale winds [17m/s, 34kt, 39mph] extending 50km (30 mi) from center     | 24/12/1974          | 1956- present           |
| <b><u>Longest Lasting Tropical Cyclone</u></b>                                    | 31 days  | 10/8/1994-10/9/1994 | 1945- present           |
| <b><u>Longest Distance Traveled by</u></b>  | 13280 km (7165 st. mi.)  | 10/8/1994-          | 1961-present            |

| <b>Tropical Cyclone Characteristic</b>       | <b>Value</b>           | <b>Date (D/M/Y)</b> | <b>Length of Record</b>             |
|--|------------------------|---------------------|-------------------------------------|
| <b><u>Tropical Cyclone</u></b>               |                        | <b>10/9/1994</b>    | <b>(satellite era)</b>              |
| <b><u>Smallest eye</u></b>                   | <b>6.7km (4 mile)</b>  | <b>24/12/1974</b>   | <b>1956-present</b>                 |
| <b><u>Largest eye</u></b>                    | <b>90km (56 mile)</b>  | <b>21/2/1979</b>    | <b>1956-present</b>                 |
| <b>Largest Rainfall of Tropical Cyclones</b> | <b>Value</b>           | <b>Date (D/M/Y)</b> | <b>Length of Record</b>             |
| <b><u>12 hr</u></b>                          | <b>1.144m (45.0")</b>  | <b>7-8/1/1966</b>   | <b>1966-1990</b>                    |
| <b><u>24 hr</u></b>                          | <b>1.825m (71.8")</b>  | <b>7-8/1/1966</b>   | <b>1966- 1990</b>                   |
| <b><u>48 hr</u></b>                          | <b>2.467m (97.1")</b>  | <b>7-9/4/1958</b>   | <b>1952-1980/<br/>2004- present</b> |
| <b><u>72 hr</u></b>                          | <b>3.929m (154.7")</b> | <b>24-26/2/2007</b> | <b>1968-present</b>                 |
| <b><u>96 hr</u></b>                          | <b>4.869m (191.7")</b> | <b>24-27/2/2007</b> | <b>1968-present</b>                 |

| <b>Largest Rainfall of Tropical Cyclones</b> | <b>Value</b>           | <b>Date (D/M/Y)</b> | <b>Length of Record</b> |
|--|------------------------|---------------------|-------------------------|
| <b><u>10-day</u></b>                         | <b>5.678m (223.5")</b> | <b>18-27/1/1980</b> | <b>1968- present</b>    |

## **World Meteorological-Related Phenomena Records**

| Phenomena Characteristic   | Value               | Date (D/M/Y)       | Length of Record | Geopolitical Location |
|--|---------------------|--------------------|------------------|-----------------------|
| <a href="#"><u>World's Highest Significant Wave Height by Ship Observation</u></a> | 29.05 m (95.03 ft)  | 2214 UTC 8/2/2000  |                  | North Atlantic        |
| <a href="#"><u>World's Highest Significant Wave Height by Buoy</u></a>             | 18.275 m (59.96 ft) | 2054 UTC 8/12/2007 |                  | North Atlantic        |

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