

Hottest temperature record in the world, El Azizia, Libya

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Temperature records of many places of the world are very important. They indicate the degree of heat and cold and also the amount of heat flux or energy received. Furthermore, most human activities are weather-related and influenced by temperature.

Measuring temperature started when the German physicist, Daniel Gabriel Fahrenheit (1686-1736), invented the alcohol thermometer in 1709, then the mercury thermometer; the modern thermometer in 1714. In 1724, he introduced the temperature scale that bears his name—the Fahrenheit Scale. The Celsius temperature scale is also referred to as the “centigrade” scale as it consists of 100° between freezing point (0°C) and boiling point (100°C) of pure water at sea-level air pressure. The Celsius scale was invented by Swedish astronomer Anders Celsius (1701-1744). Today, modern thermometers are calibrated in standard temperature units such as Fahrenheit or Celsius.

Recording meteorological parameters in Libya started in the Ottoman Empire (1551-1911). Temperature archives for some old meteorological stations are available in the climate directorate at the Libyan National Meteorological Centre (LNMC).

The hottest maximum shade temperature on the face of the Earth was recorded in Libya at El Azizia (or Al Aziziyah (32.32 N 13.35 E). It is located 55 km south-east of Tripoli and is a major trade centre of Sahel Jeffara. The place where the maximum temperature was recorded is located in the heart of El Azizia, on land owned by an Italian farmer (Figure 2).

The highest and hottest temperature degree was 58°C (136° F) recorded on 13 September 1922 in Azizia, according to the annual temperature observation book written in the Italian language and issued by *R. Ufficio centrale di meteorologia e geodinamica* in Rome (Figure 3).

The book contains the name of the place (Azizia), mean sea-level (158 m), latitude and longitude degrees. It also includes daily maximum and minimum temperatures with monthly averages. However, there is no any information about the measuring instrument or the thermometer type used in that record.



Figure 1—Geographical Location of El Azizia.



Figure 2— Part of the farm at Azizia

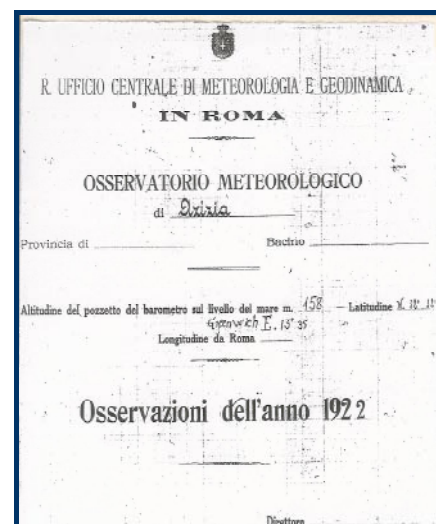


Figure 3— Temperature observation book for Azizia in Italian

The temperature of a certain place depends upon many factors and some weather conditions that are called climate controls. These controls include latitude, altitude, topography, and distance from the sea, water bodies or other wet areas. Figure 4 shows some Azizia mean monthly averages in 62 years climate records starting 1922 to 1984. The graph shows well marked declines and upward trends. Mid-January is clearly a transition time at the station, when temperature starts to increase and rainfall decreases. Maximum of mean monthly rainfall is in January, while maximum and minimum temperatures are in August and January, respectively.

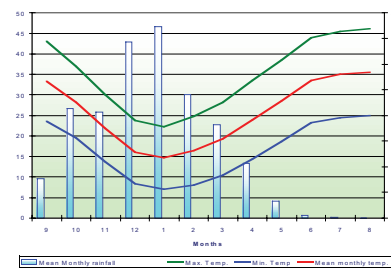


Figure 4 — Azizia climate records

As mentioned above, Al Azizia is located about 55 km south-east of Tripoli. Some climatic parameters recorded in the two stations (Tripoli and Al Azizia) for 38 years from 1913 to 1951 are compared and plotted. Figure 5 shows Tripoli and Azizia average maximum temperature. It is clear from the graph that both stations have the same trend but with different values. Azizia average maximum temperature records are much higher than Tripoli in all months of the year. The closest records are in December and January. Azizia has its maximum record in July, while for Tripoli it is in August.

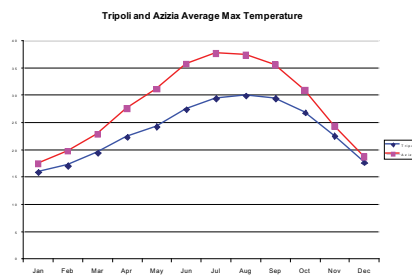


Figure 5 — Tripoli and Azizia average maximum temperature

Figure 6 shows Tripoli and Azizia average minimum temperatures. It is clear from the graph that both stations have the same trend but with different values. Azizia average minimum temperature records are much lower than Tripoli in all the months of the year. The nearest records are in May, June and October, respectively.

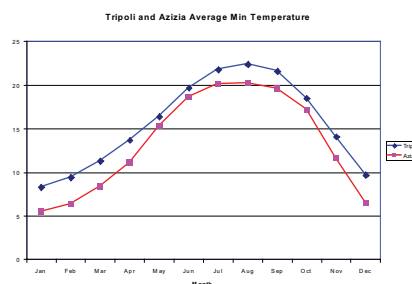


Figure 6 — Tripoli and Azizia average minimum temperature

In January 2007, the LNMC started building a new synoptic meteorological station in the same site in Azizia after demolishing the old farm building. The wall surrounding the station is completed and other construction work is continuing (see Figure 7).

Finally, in spite of some high maximum temperature records in other places of the world, Azizia is still regarded as having the official world record.



Figure 7 — A part of the new Azizia station fence