

Year 2004

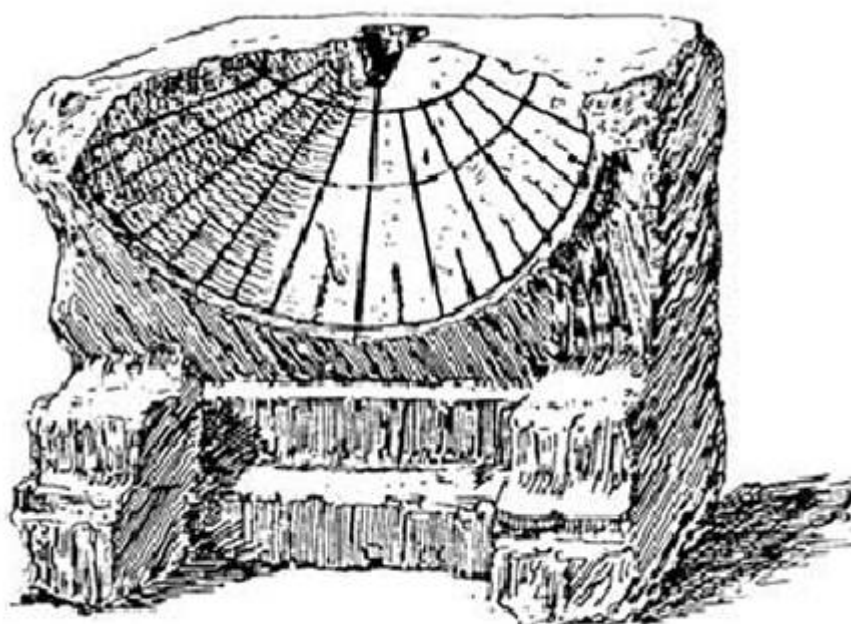
Article of the month July

Equal is unequal

In gnomonics, we often speak of unequal and equal hours.

Unequal hours or temporal hours divided the daylight period between sunrise and sunset in twelve hours. All the hours in the same day had the same duration, but this duration changed over the seasons. A summer hour would be long, a winter hour short, except on the equator where the difference vanishes.

The drawing below shows an ancient sundial in the National Museum in Leiden. The division, throughout the year, of the daylight period into twelve parts is clearly visible.



Solar time hours were considered equal hours. The complete day, from midnight to midnight, was divided into twenty-four hours, each of equal length the entire year round.

This was long considered true, until mechanical clocks showed otherwise. These do show really equal hours, ticking away to the same rhythm day after day.

The regularly running clocks showed that the solar day is not always of the same duration. So the Equation of Time was discovered, and Christiaan Huygens was one of the first scientists to publish a table, in 1665.

Example:

Around Christmas, one solar day lasts 24 hours and 30 seconds according to our clocks and so one 'solar hour' equals 1 hour and 1.25 seconds. On other days again, solar hours may be shorter than a clock hour.

The 'equal' solar hours are therefore really also unequal hours.

Fer de Vries

Last Modified 10/30/2021 15:48:24