UW ZONNEWIJZER OP MAAT THE SUN SHINES FOR EVERYONE

Convert the local solar time to the time of your watch

Suppose you have found that a phenomenon occurs at 18:25 local solar time on November 12. What time is it on your watch in, for example, Utrecht?

On the back of the astrolabe you will see the dutch text:
"kloktijd = zonnetijd + longtecorrectie + tijdsvereffening".
which means:
"clock time = solar time + longitude correction

+ equation of time".

Your watch indicates clock time, we will now read the longitude correction and the equation of time on the astrolabe and add it to the local solar time to find the clock time as indicated above.

Longitude correction
First you need to know which reference meridian belongs to the time zone you are in.
GMT - Greenwich Mean Time - reference meridian 0°
CET - Central European Time - reference meridian 15°
CEST - Central European Summer Time - reference meridian 30°

CET is also called 'winter time' in the Netherlands.
We choose this time zone for this example.

Notice how many degrees west or east you are of the reference meridian. For example Utrecht, at 5° longitude is 10° west of the reference meridian of CET. You set the ruler on the back to 10° west and read that the longitude correction is 40 minutes, see figure 1.

Equation of time
To find the equation of time, set the ruler to today's date. See figure 2, it is winter on November 12, so you read the equation of time on the curved line marked "winter". The equation of time is minus 15 minutes (note the minus sign here).

So the clock time is now 18:25 + 40 minuten - 15 minuten equals 18:50 CET.

Your watch will indicate 18:50 on 12 november in Utrecht at the moment that the local solar time is 18:25.
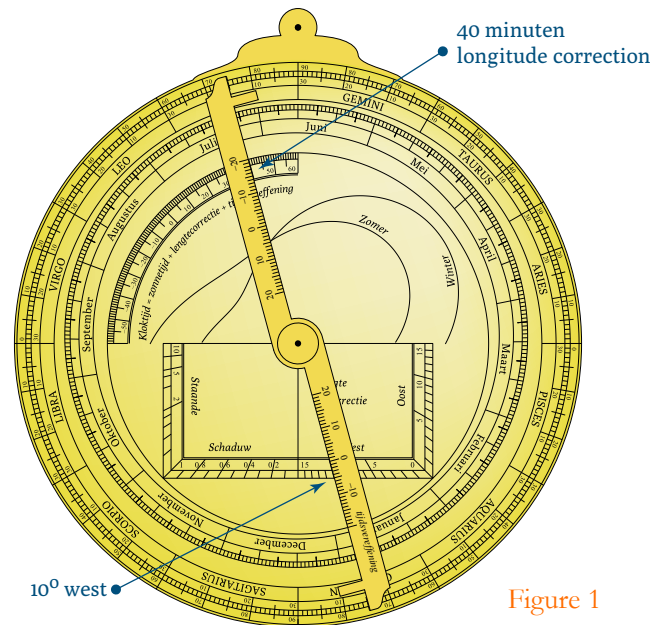

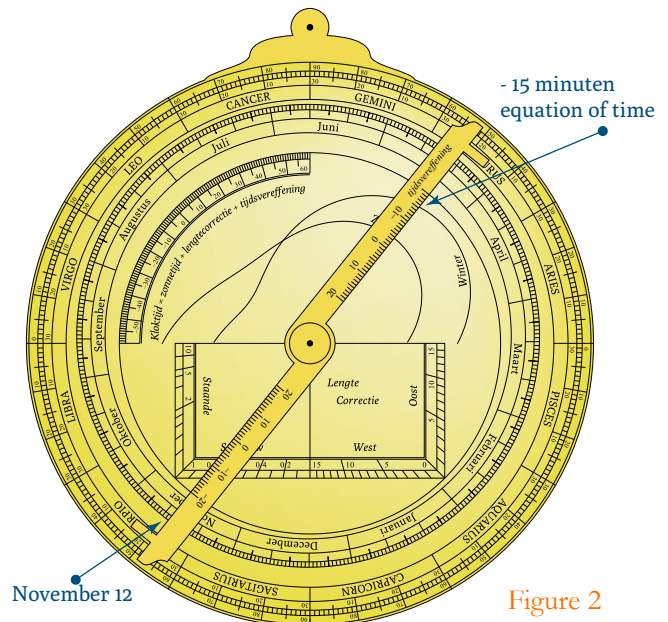40 minuten longitude correction

10° west

Figure 1

- 15 minuten equation of time

November 12

Figure 2