

# ZONNEWIJZER

## UW ZONNEWIJZER OP MAAT THE SUN SHINES FOR EVERYONE

### Astronomical dusk on a specific date

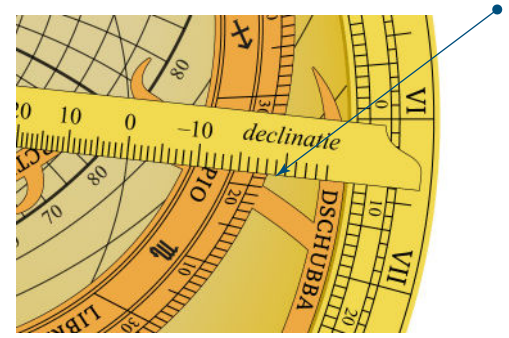
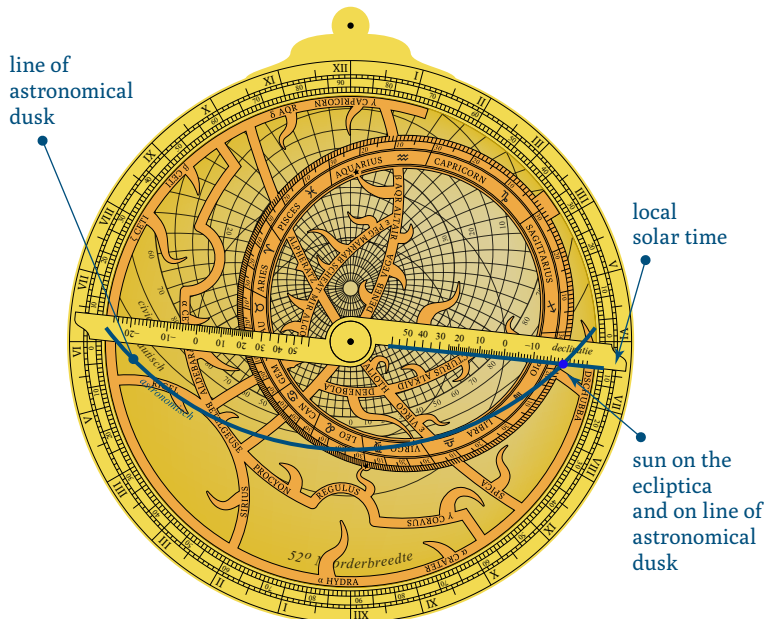
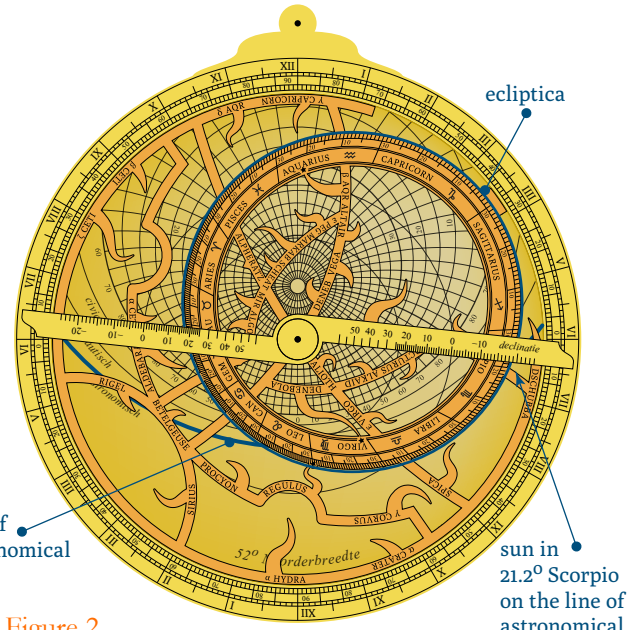
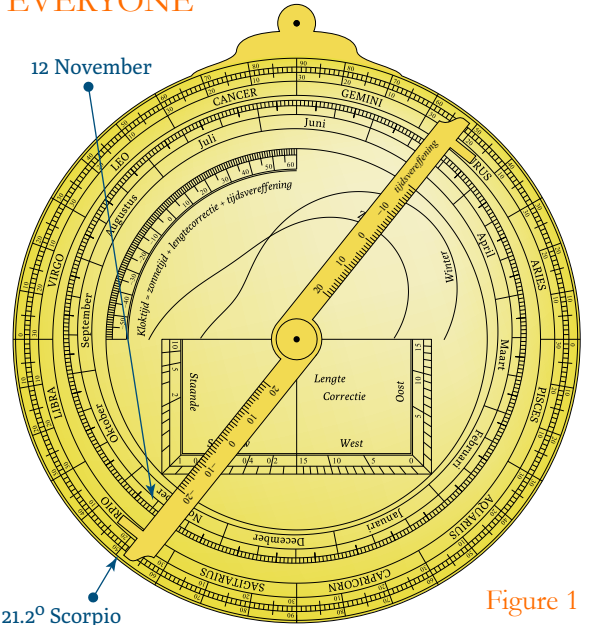
The twilight has three phases. The civil dusk occurs when the sun is 6° below the horizon. The nautical dusk starts at 12° and the astronomical dusk starts when the sun is 18° below the horizon. We call it astronomical night time.

### The start of astronomical dusk at November 12<sup>th</sup>

See figure 1, on November 12<sup>th</sup>, end of the day, the sun is at 21.2° in Scorpio. Now, set the ruler to 21.2° in Scorpio on the front of the astrolabe. The sun is present on the ecliptic. Now turn the star chart with ruler so that the sun falls neatly on the line of astronomical dusk. This is shown figure 2. The relevant lines are shown in figure 3.

On the edge, we read the local solar time, this is 18:25 hours local solar time. At Utrecht at 52° north latitude and 5° east longitude, this is equal to 18:50 hours winter time (also called MET, Middle European Time). How to convert the local solar time to, for example, winter time in a certain place on earth can be read in another instruction manual.

A detail is shown in figure 4.



Uw Zonnewijzer op maat

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