

# Contents of ZON & TIJD 2022.3 (nr. 142, September)

Editors

- 3 **Editorial: Autumn- Editors**  
We are saying goodbye to a sunny, hot and dry summer, and are heading for the fall equinox.
- 4 **From the NL Board - Secretariat**  
The autumn meeting in Tricht will be held on 17 September, including a workshop 'tracing analemmatic dials'. The sundial course will be given again.
- 5 **Sawyer Dialing Prize 2022 awarded to Frans Maes - Eric Daled**  
"... for his creation of an introductory course on dialing, built on the idea of supervised self-study; for his successful multi-year running of that course; and for his inspiration of NASS' development of a North American version."
- 6 **From the Sundial Society of Flanders - Eric Daled**  
The AGM will be held on 15 October in Antwerp. A picture book with some 50 models of sundials by the late Aimé Pauwels has been published. One antique and two new sundials were spotted.
- 8 **Obituary: Han Hoogenraad (1936-2022) - Volkert Hoogeland**  
Han has been treasurer of the Netherlands' Sundial Society. As a gnomonist he was always designing and making new dials.
- 8 **Nebra sky disc temporarily on display in Assen - Editors**  
This bronze disc with gold inlays, found in 1999 in eastern Germany, has the oldest known concrete depiction of astronomical phenomena. It dates from ca. 1750 BC and is on display in the Drents Museum in Assen until 18 September.
- 9 **Delightful sundial safari in Utrecht - Editors**  
After having been postponed for two years, the annual sundial safari could finally take place, with beautiful weather.
- 12 **Antwerp ...' according to the Sunne's course'. Part 1. The sundial in Eiermarkt - Joris Willems**  
Antwerp once had three public clocks. Sundials were used to keep them on time. Early 18th c. curate Henricus de Coninck criticised the erring sundial in Eiermarkt and designed a new one.
- 18 **Rediscovery of the sundial on the Nicolaas Beets House in Utrecht, and a competition - Astrid van der Werff**  
This sundial was in our registry, but 'forgotten'. Earlier attempts of restoration failed. A competition on how to revive the sundial is opened.
- 21 **Lambert circle and Leenders line - Willy Leenders**  
In an analemmatic dial, the Lambert circle through a date point and the foci intersects the hour ellipse at the times of sunrise and sunset on that date. The 'Leenders line' through a date point and parallel to a wall intersects the hour ellipse in the end points of the wall illumination period on that date.
- 22 **At the third stroke, the time will be 10 21 and 32 seconds - Eric Daled**  
The 'speaking clock' stopped in France on July 1. Elsewhere it is still in use. Eric gives a brief history.
- 24 **How to eliminate  $\varphi$  - Frans Maes**  
In his paper reprinted in Zon & Tijd 2022.1, Hans de Rijk eliminated  $\varphi$  from the equations for  $\sin(h)$  and  $\sin(\delta)$ . Some readers were unable to obtain the same result, and a call for help was made in the previous issue. Several solutions were received, using either classical algebra or the sine-formula from spherical trigonometry.
- 26 **Rien Willemen, ornamental smith - Hans Schipper**  
At age 84, Rien still makes sundials of various types. Recently: a direct west dial, a book dial and an armillary sphere.
- 27 **Solar declination equations: a comparison - André Reekmans**  
Five equations for the solar declination  $\delta$  were compared, starting with the equation tested in Zon & Tijd 2021.4, and including a third-order Fourier series. In addition, the effect of the error in  $\delta$  on the calculated values of solar altitude and azimuth was determined.
- 31 **Puzzle - Frans Maes**  
How good is the 'boy scouts rule' to find south with a classical watch? Not very good, even if the watch is set to local solar time. Errors get larger at lower latitudes, are in summer larger than in winter, and are largest halfway the morning and the afternoon. The new question: sundials for accurate clock time often use parts that have to be changed each six months. Making use of the approximate symmetry of the equation of time analemma, is it possible to have a single form correcting EoT for the entire year? And how accurate would it be?