

### **A new service: the English summary.**

On the January meeting the belief was expressed that an English summary could provide a real service to our foreign readers. As an experiment, each Bulletin will carry short summaries of the articles in the previous Bulletin. This has the important advantage that articles do not have to be sent to the translator as well as to the Editor, making implementation of the service quite easy; but at the cost of the summaries becoming available relatively late. Reactions are very welcome. They may be sent to the Secretary as usual (see page 0 of every bulletin) or directly to me.

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### *Inhoud nr. 65, januari 1998*

Summary of the contents of the January 1998 Bulletin, nr. 65.

- 01 "report of the September meeting"
- 02 "New members"
- 02 "Agenda for the annual meeting" and "1997 chronicle"
- 02 "Report from the Treasury"
- 03 "Dates for the 1998 meetings" and "Astronomical data for 1998"

### *04 Ringzonnemijzer van Pieter van Hooghendorp, 1752 F.J. de Vries* "Pieter van Hooghendorp Ring Dial"

Fer de Vries received a letter from J. van Damme, co-founder of "Zonnemijzerkring Vlaanderen", asking him to comment on the ring dial of which photocopies of photographs were included. Fer found that the inside of the ring contains few secrets. There are two patterns, one for spring and summer and one for autumn and winter. To avoid having the light ray deviate too much, one of three holes is used according to where the spot is to fall, nearer the edges or nearer the middle.

The outside of the ring bears a nomogram. Fer notices that it contains lines dividing the space between horizon and noon lines in six: these are temporal hour lines. The chart is meant for conversions between apparent and temporal time.

Another pattern shows oblique lines marked with the zodiac signs. These show which sign is currently rising above the horizon and also, by counting off six more, which is setting. These are the ascendant and descendant. Fer found this an interesting Ring and an entertaining puzzle.

### *08 Het zonnemijzertje van Radermacher J.T.H.C. Schepman* "The Radermacher portable dial"

In Bulletin 97.2, p25, we found a description of a 1607 painting. On this portrait of Johan Radermacher we see a small portable sundial. The four-sided instrument is universally useable throughout the Northern hemisphere. In use it is tilted so as to be parallel with the polar axis. Shadows of the side's edges fall on the concave cylindrical faces.

In this follow up mr. Schepman describes a model he made, and provides a drawing complete with measurements. Date lines are not yet included, but will be in a second model, where the construction by J. Kragten will be used.

The author speculates on some Roman numerals in the painting and wonders if they indicate the date of its manufacture. Then he points out that the Radermacher (this name translates to Wheelwright) emblem bears two cartwheels, the right one of which has five spokes, the other seven. Radermacher had five sons and seven daughters...

Mr. Schepman offered a preliminary description for publication in the Yearbook of the Royal Zeeland Fellowship, but the Editors declined, rather to his surprise, on the grounds of too many details. He asks readers who would like to publish this story along with some interesting additions.

### *10 Martini weer als vanouds E.L.H. Roebroek* "Martini tower restored"

One of the festivities in honour of the 150th birthday of the Praedinius college was the christening of the afternoon dial that was placed on Martini tower last year. Its name will be "The Martini-Praedinius Dial". Tongue in cheek, the plaque mentions the construction was done

"with obligation and honour", a homonym indistinguishable in Dutch from "with courage and honour". Five photos accompany the text.

12 *Horizontale zonnwijzer met uurlijnen 15 uit elkaar* J. Kragten

"Horizontal dial with hour lines every 15 degrees"

A sculptor accepted a commission for a special sundial. Having read somewhere that the Sun moves fifteen degrees per hour, he delineated the hour lines 'accordingly'. When his beautiful design was cast in bronze, doubt set in. After many wanderings he happened on the author, who had to disappoint him: the errors would be as much as 27 minutes.

Some solutions were discussed. Lifting the face up 38 degrees would turn it into an equatorial dial for this latitude, but it would be without sunshine for half of the year. Still, as it turned out, inclining the plane would prove to be part of the solution. A 10 degree incline brought the error down to 14.2 minutes max (and make the dial face conveniently shed rain water). Calculations showed loss of irradiation to be less than expected.

A new trick was to lift the pole style up by 6 degrees. The 14.2 minute error was then partially compensated, depending on the season. Compensation is best in summer, which is a happy coincidence. On June 21 residual errors are 2.3 minutes maximum at 16 hours-dial time, almost 6pm.

16 *Een nieuwe zonnwijzer in De Kempen* J. Kragten

"A new sundial in the land of De Kempen"

A sundial built out of Trespa, a popular proprietary building material for sidings, windowsills etc. Hour lines were machined into the face using dentist's drills, and filled with black lacquer;- ink washed away. The "horizontal" dial face is lifted up 7.5 degrees at its south side. East and west sides have a wide 22° bevel on which the hour lines are continued. A notch in the 4mm brass style indicates two birthdays and the summer solstice. How the dial will stand up to the elements remains to be seen.

17 *Een Griekse zonnwijzer in Leiden* J. Kragten

"A Greek sundial in the city of Leyden"

The author has been concerned with Greek and Roman dials for over a year. One of the items mentioned in Mrs. Gibbs's "Greek and Roman Sundials" is in the Dominion Museum of Antiquities in Leyden. The author was permitted to take measurements- using the white gloves provided. In the course of the 1½ hours allotted he felt obliged to compliment the Greek sculptor of 2000 years ago, but could also hear him grind his teeth when one hour line turned out slightly off- did the ruler move? Thanks are expressed to Mr. Halbertsma of the Museum.

18 *4 zonnwijzers in Deventer gerestaureerd en herplaatst* F.J. de Vries

"Four Deventer sundials restored and returned in place"

The four dial plates for the little Deventer cemetery tower have now been correctly delineated, and have correct latitude and declinations painted on them. The line patterns for the four plates are shown.

19 *Bierum's VI. Hoofstuck* E.L.H. Roebroek

"(A commentary on) Henric of Bierum's Sixth Chapter"

[The 1676 book by Bierum shows how flat sundials on any plane may be constructed by intersecting a parallelepiped containing the polar axis and the 24 hour half-planes (15 degrees apart) with that plane.] In the sixth chapter, Bierum invites readers to replace his writings with something better, if they can. The author undertakes just that and suggests a correction for an example of a dial with reclining west- and inclining east faces, and one the other way 'round. Fer de Vries, in turn, calculated and plotted the lines again and offers his view on the matter: ready to be cut out and glued on the sides of the two blocks.

22 *Spiegelzonnwijzers en Schaduwzonnwijzers* A. van den Beld

"Mirror- and Shadow dials"

In this highly mathematical article the author compares two dials with linear time scales: the Thijs de Vries dial with a cycloid-shaped gnomon, and his own dial, where time is indicated by the caustic top of a cycloid-shaped reflective surface. He compares the generating equations for mirror and gnomon and proves they are related. -Then the author argues that paired with

any reflecting surface dial there exists a gnomon dial, such that the shape of the gnomon is the evolute of the mirror surface (and the mirror surface is the evolute of the gnomon shape). Both dials will then have the same time scale.

The cycloid is a special case, in that the evolute of a cycloid is another cycloid. That the time scale is linear in that case is a happy coincidence. -In closing the author points out that a circular ring reflector and a simple thin gnomon dial are similarly related: the evolute of a circle is a point.

24 *Vergelijkingen van datumlijnen op will. vlakke zonnew. (2)* A. van den Beld

"Equations of date lines for sundials on any flat surface", pt 2

[Computer programs are available that will plot almost any conceivable line on any plane, but the author feels that they do not provide insight into what is happening and why. Goniometry's inner workings are explained.]

More mathematics in this second part. Starting with equations for declination lines on manageable surfaces, the author then applies translations and rotations, ending up with a set of formulae all describing members of the family of conical sections. To the mathematically inclined, the symbols speak for themselves.

28 *Dial Hunting. Een reisverslag* H. Sassenburg

"Dial Hunting. A traveller's notebook"

The author mixes shopping and icecream breaks with his own sport, dial hunting, in a holiday compromise. He describes his experiences in England. The names of the places do not need translating, and the many photographs speak for themselves. Readers are advised to do at least Oxford and Cambridge on account of the high dial density. A browse through the stands at Portobello Rd proved successful. Next target will be Austria. The writer hopes Austrian shops will do as well as English.

32 *"Uurlijnen" op een analemmatische zonnewijzer* H. Sassenburg

"Hour lines' on an analemmatic sundial"

In this type of dial the gnomon is moved according to the Sun's declination. The author shows a drawing of the "hour lines" from the gnomon in the position for maximum declination to the hour points, combined with those for the minimum declination. The result is a nicely symmetrical image.

33 *Ingezonden brief plus reactie* G.L. Strang van Hees

"Readers letters and a reaction"

Mr. Kragten, in 97-3, stated that a theodolite establishes the North-South line to a precision of 0.5 degree, no better than the plumb line. Mr. Strang van Hees, on the other hand, points out that in that case the Geodetical Service would hardly buy the instrument. He then mentions that the average theodolite has an accuracy of 10 seconds of arc (0.003 degree), and a first-order instrument even 1 second of arc. Which is equivalent to half a centimeter, a kilometer distant, or 5/8" a mile off. On the other hand, the Geodetic Service uses a system where, in Utrecht, their North differs 0.2 degrees from the astronomical North.

Mr. Kragten, in his reaction, says that he mistakenly assumed the Service to be half a degree off because mr. De Rijk mentioned a half-degree difference between their results and his. Further, mr. Kragten notices that even with an intrinsic 0.003 degree accuracy, practical results could possibly still be comparable with those obtained with the plumb line method, both rendering perhaps 0.2 degrees accurate lines.

34 *Zonnewijzers in Nederland* W. Coenen

"Sundials in the Netherlands"

The whereabouts of several important (for divers reasons) pieces are described. 'Groningen 1' is back on the Verhildersum estate; its wanderings over the years are detailed here. Nice photograph. Notice also what is alledged to be the countries largest dial on The Koog, Texel island. On the initiative of mr. Gerdez, the Westerslag Beach Pavillion decided to construct it. The style is a 40 foot spar, obtained with the help of the Forest Service. The numerals are terrace tables that needed replacement anyway. The diameter is 33m.



40 *Literatuur 1265 t/m 1284 D. Verschuuren*

A new book, "Gnomonique Moderne", by Dennis Savoie, is reviewed by Fred Sawyer in The Compendium. His findings are repeated here (in Dutch).

Charles Aked, in Journal Reviews (this is going to look like ping pong) writes about our Bulletin. He thinks it is a shame that it is still a bundle of photocopied pages, incapable of showing decent photos, and having only half the text density compared to print. The import of the material justifies a better reproduction process, and with an eye to the international audience, English summaries would be in place.

While the first few points were felt to be open for debate, the last point is certainly taken. The result is what you are now reading, for better or for worse.

*Diverse berichtjes op blz. 03 en 21. "Miscellany"*

Charles Aked and Nicola Severino compiled a gnomonic bibliography to a total of some 11000 entries. Some errors were noted: work by M.J. Hagen is sometimes attributed to M.J. Hagan, and the names of Fer de Vries and Thijs de Vries are interchanged a few times. -The bibliography is available on disk for \$60.-; the Zonnewijzerkring has acquired a copy.

How doth the Globe twirl? - A recent TV documentary showed a rotating globe during the credits. It was rotating the wrong way. I called the show and asked the secretary to tell her employer that in his film the earth rotates the wrong way about. Asked the sweet girl, "Oh dear, is there a law?" Hz.

*Bijlage: tabel zonsdeclinatie en tijdvereffening 1998 Th.J. de Vries*

"Table: Sun's declinations and Equation of Time for 1998". The numbers should be self-explanatory.

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