

Bulletin 04.2 English summary of the contents of the May 2004 Bulletin, nr. 85

- Hans de Rijk Honorary Member of the Royal Mathematical Society D. de Groot 4
 The Royal Mathematical Society was founded in 1778 and is the oldest national mathematics society in the world. On the Belgian-Dutch Mathematical Congress of April, Hans de Rijk was appointed Honorary Member in recognition of his many contributions to the Society.
 Hans is co-founder of not only *De Zonnewijzerkring*, but also of ‘Simon Stevin’ public observatory, ‘Mercator’, the ‘Ars et Mathesis’ institute, and of *Archimedes* and *Pythagoras* magazines. His motto is “Nescius omnium curiosum”, or “Ignorant; interested in all”.
- Annual meeting March 2004 Secretariat 5
 Wiel Coenen, chairman since 1997, resigned his committee membership. The meeting elected the committee’s candidate Dik de Groot as new member. He will also fill the chairmanship. Wiel, in recognition of his work, received a copy of *The Sundial*, a novel by Maarten ‘t Hart.
- Analemmatic Sundial Sourcebook* by Fred Sawyer F.J. de Vries 7
 A CD with the text of the book is available. See *The Compendium* for June or September for details.
- The gas makers’ sundial A.G.M. Bron 7
 A promotional on the 125th anniversary of the Royal Association of Gas makers. The design is not gnomonically sound, which is a pity, because the readability is so good. Can we improve the design?
- Analemmatic dialing scales F.J. de Vries 11
 This is an adaptation of an article by Frederick Sawyer in *The Compendium*, March 2004.
- An Introduction to Gnomonics, part 6 F.J. de Vries 14
 Conventional terms: On most *pole style dials*, we find a style triangle. The three sides are: *pole style*, directed towards the celestial pole; *gnomon*, at right angles to the dial face; and *substyle*, in the dial face. In practice, the “gnomon” side may have any shape, but a hypothetical straight, right-angled gnomon may always be drawn. [In other texts, we will often find a different convention – there, the entire shadow caster is called ‘gnomon’, the pole style is the ‘style’ and the gnomon is called ‘vertical style height’, although ‘style height’ is also commonly used for the angle between the (pole) style and the dial face.] – The *gnomon* is also part of the *point dial*. The end of the gnomon is the nodus, or node. Remember that the nodus is also a point on the pole style of a (possibly hypothetical) pole style dial. – When drawing hour lines, one should account for the thickness of the physical style triangle [‘gnomon’].
 The earth is a sundial: The sun illuminates a terrestrial globe, placed outside and oriented correctly, in exactly the same way as the earth. Such a terrella is highly educational. It can also be a sundial, as shown in the figure.
 Heaven in my hands: a hollow half-sphere, open side up, with a coordinate system (catching the shadow of a bead) drawn in, shows the position of the sun for as long as it shines.
 Compound dials: In early modern history, ‘sundials’ would often be a combination of a great many pole style dials, displaying the knowledge of the mathematician and the stone mason. The pictures show an example from 1578, but also the giant Tavel, France, dial of 1993.
- Precision sundial by C. Van Arcken, Amsterdam D.L.J.M. Verschuuren 17
 This is the second sundial in the instruments collection of the Crosiers monastery of St. Agatha. This equatorial dial has a 225 degree toothed rim on which the minute wheel rotates when the style is moved into the sun. The equation of time is noted on the dial face. – The minute hand is missing, as is a suitable base to stand this precision sundial on.
- Poem L. Theunissen 19
 A poem in Dutch, with its translation in English by M. Theunissen.

- Precise reading of a sundial F.J. de Vries 20
 Recently, Bill Gottesman improved his sundial to provide better reading accuracy. He accomplished this by replacing the style mirror, which projected a band of light on the hour scale, by a pair of two mirrors. Offset by a small angle, they project a wider band of light with a narrow dark line in the middle, making precise reading easier (www.precisionsundials.com/sundial_list.htm)
- The Sonius Tree: Genk nr. 11 F.W. Maes 21
 This, like its neighbour the block dial, is a shadow plane sundial – the principle knows many realizations. The tree crown is the actual sundial. For each whole and half hour there are slits in the south and north boards. When the sun is in an hour plane, light will fall through the corresponding slits. On the readout (north) side, milk white plastic disperses the light for a wide viewing angle. Spacers prevent light from passing through a non-paired slit. The shadow plane or hour plane for a specific hour is the plane containing a style and hour line for that hour, or any plane parallel to that. This recipe leaves room for many variations, because a designer can arrange the shadow planes at will. In the Sonius Tree, the slits are all above a common hypothetical pole style, which results in a pleasing readout on a tree-like structure. Other arrangements are possible. Fer de Vries and Jan Kragten, who designed the dial, named it after Gerard Sonius who has many creative designs to his name. His best known is a sundial for the blind. An interactive form of shadow plane dial is the Verschuuren dial at Keelven, Someren. An observer picks up the end of a rope, the other end of which is fastened to a central post. The observer pulls the rope taut and walks until the shadow of the rope falls over the foot of the post. The shadow now also falls over the correct hour marker.
- In search of the origins of the pole style sundial, 2: Zinner's List updated F.W. Maes 25
 Hans de Rijk once said that the sundial on Jacobi Church, Utrecht, is the oldest dated pole style sundial in the world. However, on Zinner's 1964 list it is only number seven. The search continues. Karl Schwarzinger ran over the Austrian archive once more and now classifies 11 sundials as 15th century: 7 possibly, and 4 certainly. Waldhausen, 1454 ('certainly'), is older than the Utrecht dial. Next follow photographs and discussions of the dials mentioned. The result is a short and slightly revised list, in which Utrecht takes the sixth place – which is one place up.
- How I met Mr. Schepman and *De Zonnewijzerkring* A. Schoorel-Goedhart 30
 An account of how Mr. Schepman addressed the author who was wondering about a sundial; and what happened afterwards.
- Sundial mottoes L. Theunissen 31
 The author categorized 125 sundial mottoes into five groups: 1. referring to eternity (31) (*ultima latet*), 2. wisdom, sayings, wishes (18) (*festina lente*), 3. encouragement to work, to use time well (17) (*carpe diem*), 4. light as object; sun and shadow (17) (*post nubila lux*), 5. the sundial about itself (13) (*horas non numero nisi serenas*). Several mottoes were special or remarkable; examples are in the article. *l'Amour fait passer le temps; le temps fait passer l'amour*: 'Passion kills time – time kills passion'
- Did you know? Can you prove it? - 2 Editors 33
 In laying out a horizontal sundial, it is practical to know that in a rectangle which has the III-line as a diagonal, hour lines I and II cut off the same lengths from the other diagonal as hour lines V and IV, respectively. This greatly diminishes the size of the paper needed for the construction. In this instalment, Peter Das gives a proof and some discussion follows. To be continued.
- "Woodhenge" on the river Maas F.J. de Vries 34
 Five fossilized trees, 1500 to 2000 years old, came up in the gravel pit at Stevensweert. The Ark Foundation will use them in a work of art near Meers. A summer and a winter tree will cast their tops' shadows on a commemorative tablet at local noon at the beginning of their respective seasons. The summer tree is bent, and its trunk is not in the way of the winter tree shadow, although its top is in its correct place in the tablet's meridian.

- Sundial with interactive equation of time E.L.H. Roebroeck 35
 A normal equation-of-time graph, but fitted with a slider for the public to operate.
- Sundial with constellations H.J. Hollander 37
 The sundial shows the constellations as they appear on 28 Augusts, 24:00 local apparent time, because that is the recipient's birthday. The individual stars making up the constellations were projected onto the dial face. Also shown are some signs of the Zodiac (Aries, Pisces, Aquarius, Capricorn), and the ecliptic and date lines for the start of the seasons: projections of the celestial equator and the tropics. When the index shadow crosses the ecliptic, this indicates the position of the sun among the stars. The sundial is made of granite, 50 cm (20 in) square, 3 cm (1 3/16 in) thick with is dye-filled intaglio. The gnomon is made of 4 mm (5/32 in) thick brass.
- Daylight saving time according to a newspaper F.P. Dijk 37
 A sundial showing the change to daylight saving time from 2 to 3 o'clock at night. How singular.
- Zuidhorn: Nine sundials revived E.L.H. Roebroeck 38
 The Zuidhorn sundial, at the Eiberhof Home, consists of two cubes and an armillary sphere. No gnomons were left on the cubes, and the sphere lacked a scale of hours. After the restoration, the sphere has two hoops and riveted and soldered – not painted – numerals. The cubes have new gnomons, and cufflink-sized brass plates replace all the missing numerals.
- Sundials in The Netherlands A.G.M. Bron 41
Utrecht: Bilthoven 03. Horizontal dial. Comblanchien (a French limestone), bronze-tanned brass gnomon with EOT tables. 50 cm diameter, 5 cm thick. Design and calculations by owner Jaap van Dort; stonemason Mrs. San Hop.
 Utrecht 23a. University museum. Noon dial with EOT loop. Design M. Hagen, realization J. Borsje, unveiled in 1985, now moved to its present location by J. Borsje. His new adjustable suspension takes care of the difference in declination.
 Utrecht 23b. University museum. Armillary sphere, type 'Haarlem', on existing old column. Design and realization G. Sasbrink. Adjustable hour hoop. Aluminium and stainless steel warrant long life.
South Holland: Rotterdam 08. See B50 (1996-2). Correction: Vareseweg, not Reseweg.
North Brabant: Schaijk 04. See B 2004-1. One plaque with eot instructions, another with part of the text of the William the Second of Megen document, are affixed near the sundial.
- Literature, 1497...1507 D.L.J.M. Verschuuren 45
 1498: *Les Cadrans Solaires*, Denise Savoie. A book for all who want to understand sundials, but also a playful and practical book, full of observations and experiments. 1499 *Gnomonica Italiana*: 1499.6 *Arti, materiali e Tecniche*, Mario Arnaldi. An overview of paints and their qualities, sorted by colour. 1501 *Analema*: 1501.4 with a new saying by V Pérez Villar: "Old gnomonists never sleep; at night they read, by day they write, and they *never* fade away". 1503 *La Busca de Paper*: 1503.2 *Un rellotge de Sol Xines*, C. duBois-Raymond. Description of a Chinese sundial found in Seoul. This point dial in a deep dish is possibly from 1670, when the Belgian Father Verbiest taught astronomy at the Chinese imperial court.
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