

Report: study visit to Münster, 20 June 2009

F.W. Maes

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This year's trip was a plunge into history. – Having left Almelo slightly over ten o'clock, the group arrived in **Münster** well before twelve o'clock and in time for the noon show on the cathedral's astronomical clock.

Expert Bote Holman explained the **Clock** and had also made a comprehensive handout describing the timepiece. The hour hands move in anti-clockwise direction across the 24-hour dial; the movement through the ecliptic is clockwise, and the signs of the zodiac are in that order. – The drawing of the earth on the mater is incomplete. Not all continents were discovered yet, and the others are sometimes distorted. – The Sun hand is extended and has a rainbow at the back to counterbalance the sun's mass. – The moon on the Moon hand is half black and half white, enabling it to show the moon's phases. – The Venus hand moves with the Sun hand, two cogs moving it fast or slow with respect to it: the inner planet Venus is always within 48 degrees of the Sun. – The table of planets shows which planet rules the actual hour. It works with twenty-four cylinders with seven faces each, showing the names of the heavenly bodies that rule the day and the hours. At midnight, all cylinders rotate 1/7 turn. – The apostle Paul shows the date on the large calendar wheel. The months are depicted on round disks; the sun has a face. Weights keep the images right side up despite the wheel's rotation.

The **Peace Hall** is in the old City Hall with its impressive façade. Here, the Treaty of Münster [of 1648] ended both the Thirty Years War and the Dutch-Spanish Eighty Years War. For The Netherlands, it meant international recognition of its independence since the unilaterally declared Act of Abjuration of 1571. – In a show glass, there is an interesting drinking vessel in the shape of a gold cock (rooster, yes). Legend has it that one time when the city was under siege, supplies were so low that a city councillor was about to kill his last cock. The bird got away, was chased, and made his escape onto a town gate tower, where it started to crow loudly. The besiegers – who were not doing so well themselves - heard this and lifted the siege, which they considered pointless if the city had so much food that it let fowl fly about freely.

The **Ibbenbüren sundial** of 1984 was not visited because of lack of time. According to Holman's description, it was a gift from Akzo Hengelo to Electro Chemie Ibbenbüren, and designed and built by Bote Holman. The large base plate was marble, but later replaced with granite; flower beds made way for gravel. – When the dial was unveiled, a journalist compared its reading with the gate lodge clock, and said: "Es stimmt" ("It is correct"). The newspapers the next day ran a detailed description, headed *The Rolex among sundials*.

Back in The Netherlands, the group visited the **Ludger Monument in De Lutte**. The drinks were paid for by Bote, who had his reasons (see elsewhere). St. Ludger preached here – successfully – in the eighth century. He became first bishop of Münster and died in 809, exactly 1200 years ago. A detailed description of Holman's Ludger Monument is in Bulletin 2008/3, pp32-35. – It was amusing to see how the *horizontal* circular hole, the gnomon for the meridian instrument, gave rise to heated discussions among the sundial experts.

Meetings 2010, congratulations, invitation SAF Secretariat 10

Several people sent notes congratulating De Zonnewijzerkring on the appearance of the 100th issue of the Bulletin and on continuing to keep a focus on sundials in the Low Countries.

The Sundial commission of the French Astronomical Society sends a general invitation to their next meeting and subsequent sundial visits.

De Zonnewijzerkring will have three meetings and an excursion in 2010; dates and address are given. The object of the excursion has not been decided upon yet.

The Conservation Awards sundials G.J. Sasbrink 11

There are at least two examples of Dutch winners of this Award who received, in addition to a cash sum, this beautifully custom-made (latitude!) sundial. One was the Avereest Historical Society, for their plans for the old gas container area. Were these dials made by Royal Leerdam, and were more awarded?

Sundial Walk in Geldermalsen wins 'Geldermalsen' newspaper 12

There were four entries in the Geldermalsen Gazette Anniversary Contest. The Sundial Walk received well over half of all the votes and is a clear winner. The plan calls for sundials all over the municipality, at least one in every one of the eleven villages, and a route description. Realisation will presumably take some time because of the costs involved.

Vertical sundial in Tricht F.J. de Vries 13

This marvellously done vertical decliner may well be the first in the Geldermalsen Sundial Walk. Artist: Astrid vd Werff; calculations: Hendrik Hollander.

Rupelmonde: sundial marks local heritage Julien Lyssens 12

Yet another new sundial was unveiled in Rupelmonde, famous for Mercator and for its sundials. Last year, St. Jan Berchmans primary school received a sundial; this time it was Community School 'Mercator'. The schools are neighbours and share a meridian, so a mathematically complementary sundial was built as part of the 'time for old times' project about Rupelmonde local heritage.

The schoolchildren decorated the thirteen hour posts; each form being assigned their own post. The noon post illustrates the history of time and time-keeping. The date strips alongside the noon line are made of Belgian bluestone. To symbolize the connection between the two primary schools, the date line is extended some distance past the information pillar opposite the noon post.

Who knows this? Reduction-fired tile sundial Groeneweg/Louwman 16

As far as De Zonnewijzerkring know, a sundial on a fired tile is a rarity. There is one in the database, but that is a recent commission.

The fragment shown is assumed to be from between 1628 and 1747. The finder would like to know of any other examples of this kind of ceramic tile dial.

Bulletin 99 reported on two sundial constructions that are visible on the dials today; they are by Zarbula.

Recently, Alessandro Gunella discovered another old construction, described in a book by Guarino Guarini, dated 1683. We do not know if Zarbula knew of his method, but it is interesting to compare the two. The example uses a latitude of 52 degrees and a wall declination of -30, that is, an east-declining wall.

Early in the morning, draw a co-ordinate system and place in E a temporary gnomon square to the wall; draw a circle with a radius smaller than the length of the gnomon shadow.

Wait until the shortening shadow intersects the circle and mark F. In the afternoon, when the lengthening shadow again intersects the circle, mark G. Now, draw the substyle through E, perpendicularly bisecting FG. This is the 'Indian circle' method, and presumably, Zarbula used it too.

The next day, trace the gnomon shadow tip describing a date curve. When it intersects the substyle, mark Y. Note the day and look up the sun's declination. From E, square to the substyle, draw EH with the same length g as the gnomon; then connect Y with H. Next, draw HL such that the angle between HL and HY is equal to the sun's declination. The declination is positive in figure 2.

Draw the equinox through L and square to the substyle. Draw HC, square to HL and with C on the substyle. EHC is the style triangle for this sundial.

A vertical line through C is the noon line. The equinox intersects the horizon in the VI-hours point, so C-VI is another known hour line.

To find the remaining hour lines, see figure 3. Circle LH to the substyle to find M, the centre of the equatorial auxiliary sundial. Its hour lines for XII and VI may be drawn directly. The remainder are now easily drawn as in figure 4. Finally, the hour lines for the finished dial are drawn from C to the intersections of the corresponding auxiliary hour lines with the equator.

Comparing Zarbula and Guarini, the substyle construction is essentially the same in both methods. In the next step, Zarbula needs the latitude (or rather, he assumed 45 degrees – a reasonable approximation for his area), while Guarini needs the sun's declination. The constructions of the style triangle and the hour lines are again very similar.

Her Majesty [Queen Beatrix] has been graciously pleased to bestow upon our member Bote Holman the title of Knight in the Order of Orange-Nassau.

In the seventies, Bote was active in parish work and several school boards. He was co-founder of the Training and Certification Institute for technical inspectors and surveyors, college level. He was also a volunteer in VERON, a radio amateur society. After Bote went to Ootmarsum, he started making and maintaining timepieces and works of art. He is the city clockmaker, and founded 'Art and Deco', 'Chronos', and 'Sigma M'. Founder and chairman of 'Art in Signs of the Zodiac', he contributed much to this art walk. Bote is also the treasurer of the Ootmarsum Carillon foundation.

Royal sundial discovered *W. Coenen* 21

During a walk in the grounds of the Soestdijk royal palace, Coenen spotted a sundial on the back of the building. It is a vertical west decliner. We do not know who made it, or when.

A "remarkable" horizontal sundial *G.J. Sasbrink* 22

An amusing woodworking project, found in a Canadian magazine on the subject. The entertaining bits were copied into the article and speak for themselves.

Work of art is sundial in De Keen *'de Stem' newspaper* 24

Artists Lugthart and Blok made 'The Suncatcher', which should be placed in De Keen by the second half of 2010. The sculpture is inspired by street lighting, and is a long, slanting column, on top of which stands a human figure, holding a solar panel. This working panel accumulates energy that lights the sculpture at night. The structure itself functions as a sundial.

This is one result of the recent Culture, Tourism and Recreation policy document.

Equation-of-time and declination tables for 2010 *T.J. de Vries* 24

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