

QUEENS' COLLEGE SUNDIAL

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Extract, with permission, from the *Bulletin of the British Sundial Society*, Vol. 97.2 April 1997, pp. 51-2

In going through the miscellanea of my correspondence recently, I came across some details sent to me by the late Dr. Marinus Hagen in respect of the Queens' College Sundial, Cambridge, and thought they might be of interest also to BSS members.

First of all a letter sent by Andrew Somerville to the Bursar of Queens' College, printed here in full, will set the scene:

The Bursar
Queens' College
Cambridge

9 November, 1986

Dear Sir

Queens' College Sundial

In the booklet by G. C. Shephard describing the Queens' College sundial, he says (p.10) that the column headed "Longitudo" gives the right ascension of the sun, but that the designer has made an error and a correction is necessary. This statement has been repeated in other books (see Rohr - annotation by Hagen) and the suggestion has even been made that the figures on the dial should be corrected when it is next repainted.

I belong to the Dutch Sundial Society (De Zonnewijzerkring) and Dr. M. J. Hagen, until recently the secretary, has pointed out to me that if the term "Longitudo" is interpreted as meaning the length of the day, then the figures are correct as they appear and no correction is necessary. If they were truly Right Ascensions, which in any case is *not* the same as longitude, they would run from 0-12 and 12-24 in two columns and would not be limited to 8-16, as appears on the dial.

It is quite common for the length of the day to be marked on sundials, especially on the Continent, and more so than Right Ascension, so I am sure he is right on this point. He is too modest to write to you himself, claiming that his English is not good enough (which is not true!) and that he would "sound like a Dutch schoolmaster!", but I thought you would like to have the point drawn to your attention, especially if there is any question of altering the figures when the dial is repainted. After all, it is one of the finest dials of its type in the world and it is a pity for its designer to be misrepresented.

Yours sincerely,

Dr. A. R. Somerville, F.S.A Scot.

The Bursar of Queens' College replied to Andrew Somerville's letter as follows:

12 November 1986

Dear Dr. Somerville,

Queens' College Sundial

Thank you for your most interesting letter of 9 November. The history of the sundial and its design is a pet project of mine as I was intrigued to receive your suggestion* on the meaning of the "longitudo" column.

I am currently under pressure to produce a new booklet on the sundial at a more popular level- appropriate, say, to

the visiting tourists, who find Shephard's booklet too formal. If I ever get round to this, I shall certainly include your description of the longitudo column. It sounds much more convincing to me.

You may wish to know that we have produced a computer plot of what the sundial ought to look like it is were entirely accurately drawn. This plot confirms Shephard's supposition that the unlabelled black lines spreading out from the centre of the horizon line are indeed close approximations to subdivision of the day into "temporary hours" rather than mean hours.

Yours sincerely,

Dr. R. D. H. Walker

* Here Andrew Somerville wrote "Not mine - yours" because he sent a copy of this to Dr. Hagen, who wrote "Note of Andrew in his letter to me". There is a note also in Dutch which I cannot interpret.

There were other matters discussed in this letter, and Dr. Hagen included a copy of M. M. Scarr's pamphlet which was sold at the Porters' Lodge of Queens' College, Cambridge. Here are some of the comments made by him:

In the pamphlet there is a printer's error: page 6 - Longitudino should read LONGITUDO, as it is painted on the dial.

There was an error on page 51 of the Bulletin, in the note, *Quantitor dia* should read: *Quantitas die/noctis* (plural - *dierum/noctium*).

I have seen several dials on the Continent of Europe with these annotations and in the books of Rohr *Die Sonnenuhr* and *Les Cadrans Solaires* you can find them eg:

Page 98, Fig. 100, Peter Anich (many dials by him); page 114, Fig. 199 - Table; page 115 Sebastian Munster - *Quantitas dierum atone noctium*, page 184, Fig. 289, 1792 Table. Page 205 Groningen, 1731. On the left side vertical: Opgank = ortus. Near the column a banderole with "De Lengthe der Dagan" = Length of Day. On the right side, horizontal: Ondergank - occasus.

In the book *The Ivory Sundials of Nuremberg* by Penelope Gouk, there are also many sundials inscribed with the length of the day and the night: page 19, Fig. 16e.a.

In a personal letter to me dated 26th May 1995, Dr. Hagen wrote about his first visit to the Old Court of Queens' College, stating:

"So, at my first visit to the Old Court of Queen's College I could not agree with the explanation of Mr. Shephard in his pamphlet: Longitudo is not the same as Right Ascension; we have not to add or subtract with 180; there is no confusion between vernal and autumn points. The numbers 120 etc. are not in degrees, but I think the painter (of the dial) has forgotten the interpunction (point between figures); we have to read 12.0 as in the Moontable and so we have in the column Longitudo the length 8.0 hours, 9.0 hours, etc; and at the end, in summer 16.0 hours.

(Right Ascension is the distance at the equator, Longitudo is the distance on the ecliptic).

It is curious that Cousins also gives the notation of Shephard, with the Right Ascension, and Rohr in his books

as well, and Rohr regrets the 'fault' had not been corrected at the restoration ... Sorry.

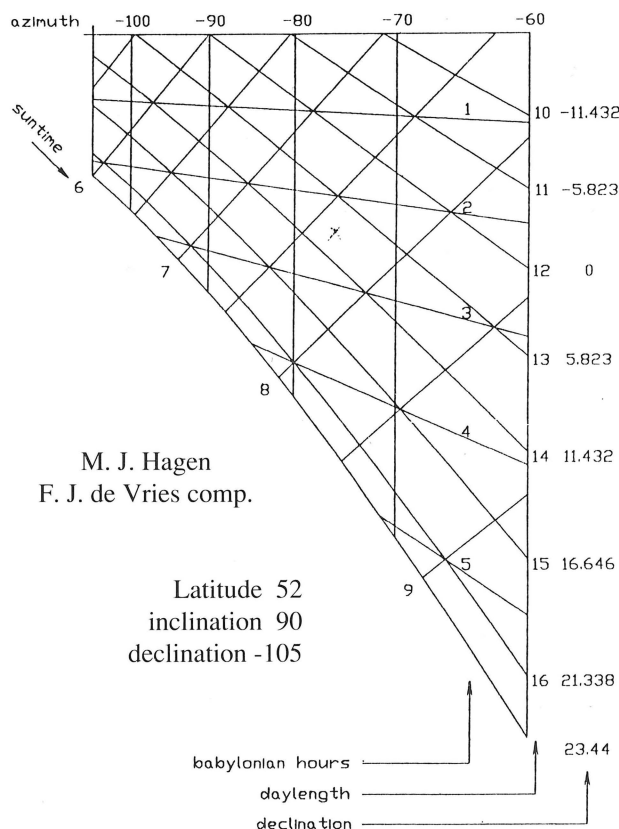
In 1985 I wrote my annotations to Andrew Somerville and I asked him to intervene in this matter with the Bursar of Queens' College. I thought Andrew would have a better reception than a simple tourist from Holland.

Yet all people are unanimous. This dial is one the most beautiful sundials in the world! - And I was happy with the correct meaning of 'Longitudo'.

Chris Daniel has published in *Clocks* of November 1989 an article about a big sundial in Hesketh Park, Dartford. There are 11 day curves. These are not for the beginning of the signs but they are also curves of the days with a length in whole hours, with numbers 8 to 16, the numbers of the 'longitudo dierum'. In the next issue of *Clocks*, Chris made a correction.

Now I have found another dial with curves for the length of the days: Merton College Chapel, Oxford, described by you (Charles Aked) in BSS Bulletin 93.2 page 40. You write: "R. T. Gunter could not explain the dial". Nevertheless his namesake Edmund Gunter has pointed out the construction of these lines in his book *Use of the Sector*, etc., published 1624. On pages 159-161 - 'Parallels of the length of the day'. The dial at Merton College was constructed in 1629, so says the postcard on sale at the College. And Edmund did not use a computer ...

The lines numbered 1 to 5 are not declination lines but hour lines for the Horae Ab Ortu, the Babylonian hours. The text on the postcard is totally wrong: Declination lines are not used for the construction of hour lines, it is the other way round. If we construct the curves for the length of the day, we can easily profit from it to draw the Babylonian hour lines by connecting the crossings, but this is not the purpose of the longitudo curves.



The Merton College, Oxford, Sundial.

I have discussed these matters with our Secretary of the Dutch Society, Fer de Vries and he has supplied me with a diagram produced on a computer and I send you a copy.

At our visit during the Oxford BSS Conference, it was raining, but early in the morning, next day, I took some nice pictures of this 'obscure' dial.

And now I will end with the words of Denis Schneider on page 51: Bravo for the BSS and its Bulletin, and in my own words: Bravo for the Editor.

Best wishes from
Marinus J. Hagen

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The preceding indicates the acuteness of Dr. Hagen in spotting errors in those things which most of us take for granted. As the writer of the article on the Merton College Chapel sundial, I must admit to being less than critical in the interpretation of the dial markings, the power of the printed description in appearing authoritative is overwhelming. Experience should have made me more careful of the work of others, it is essential to look at the subject in critical detail as Dr. Hagen habitually did, and not take anything as gospel until proven. In my own defence it must be said that the article was prepared when the person who had volunteered to do so had not submitted anything after more than three years. So if anyone goes back to the Merton College Chapel sundial article, the points made by Dr. Hagen need to be taken into account, perhaps it would be best to insert a copy of the relevant part of this present text with the article in Bulletin 93.2, page 40; together with Mr. de Vries computer generated diagram.

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CONCLUSION

Dr. Hagen did not wish the material here to be published as a letter in the BSS Bulletin, I suppose that being such a modest man, he did not care for the fulsome praise (though well-deserved) in Andrew Somerville's letter to the Bursar of Queens' College. So the material has been brought together to form this short article so that his findings on the Cambridge Moon Dial are recorded for posterity. I have not noted these corrigenda published elsewhere, and in view of the great number of Scarr's pamphlet sold over the years, it is important to keep these corrections in mind against the next restoration of the Moon Dial so that the proposals to make corrections to the dial are not carried out where none are required. I only wish that I had been aware of Dr. Hagen's comments when I wrote the article published in BSS Bulletin 94.3. pp. 2-6, however this was written long after the BSS Conference in Queens' College in September 1991. Nevertheless, on checking my account, I see that I have allocated the duration of the daylight hours between sunrise and sunset to the "Longitudo" indications and the time of the sun's rising against the "Ortus Solis", although I failed to notice that the hour and minute figures of the longitudo scale were not separated by a dot, not surprising since the dial was showing signs of deterioration as long ago as 1991. Personally I hope a more competent painter is employed for any future restorations.