

A Rare and Early Oxford Lantern Clock by Richard Quelch

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The following describes an early lantern clock with several interesting features. It appears to be the only example of a lantern clock made by a known Oxford watchmaker and has the very unusual characteristic of having the maker's name on a semicircular arch incorporated within the front fret.

Maintaining the clocks of Oxford colleges was the responsibility of Triumph de St. Paul. Born in Oxford, he was made a Freeman of the city in 1601. This allowed him to make and sell clocks in his own name. Records show that he was the son of a French immigrant. St. Paul took Richard Quelch on as an apprentice in 1608 and Quelch was "admitted free" in 1616. Beeson refers to St. Paul and Quelch as "for many years the only local craftsmen supplying the demand for balance wheel lantern clocks and watches [in Oxford]."¹ Quelch was known as a watchmaker, and an example of one of his watches (circa 1650) in the Ashmolean Museum in Oxford is illustrated in Beeson's book.² Loomes³ also notes that Quelch was said to have made clocks, although apart from the one described here no examples are currently known.

Beeson cites accounts from 1653 declaring Quelch "lately dead." Of his three sons, John and Richard (Jr.) became clockmakers. Richard Quelch Jr. was awarded the Freedom of Oxford in 1652 and died in 1667. A lantern clock signed by Johannes (John) Quelch was recently offered for sale.⁴ A miniature timepiece by John Quelch is shown by White,⁵ and Loomes featured a lantern clock made by John, which was particularly interesting because it retained the original balance

wheel.⁶ There may be no more than about a dozen lantern clocks with their original balance wheel, since this mechanism was unreliable and only ran for about 12 hours per winding the majority were upgraded when the pendulum was introduced to England in 1658. Upon examining casting marks on the clock, Loomes concludes that many of the components originated in London.⁷

Historical Background

Lantern clock production is generally divided into three periods during the 17th century. This is not a rigid division, however, and mainly applies to clocks made in London.

Clocks of the first period (1580–1640) are rare and mostly well documented. The second period (1640–60) coincided with the English Civil War and the period of recovery immediately afterward. Since the pendulum was not introduced into England until 1657, almost all clocks from the second period were made with a balance wheel movement. The third period of clock production (1660–1700) was initially severely disrupted by the Great Fire of London in 1666, which destroyed all the clockmaking workshops around Lothbury. Clock production recovered quickly and eventually achieved a huge increase in output.

Mechanism and Construction

Figure 1 shows the Richard Quelch clock before restoration in 2022. Note the presence of the modern two-handed gearing arbor, canon pinion, and modern hour hand (Figure 2). Figures 3 and 4 show the side and back views of the clock.



Figure 1. Front view of the Quelch clock, pre-restoration. The dial shows the typical second-period shading of the tulip flowers and the half hour markers. Note the canon pinion and minute-hand shaft for the hands and the unsuitable replacement hand. PHOTO BY GEOFF COX.

The clock is likely a second-period (1640–60) lantern clock. As will be shown, most of the components appear to have been sourced from London, with its wealth of brass foundries working during this period. Many of the components used in this Richard Quelch clock are also found in lantern clocks originating from makers working in the Lothbury area of London.

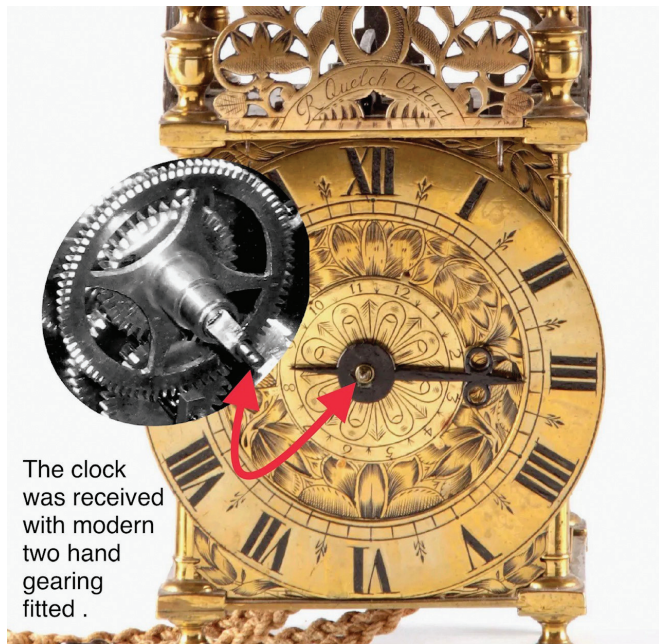
The English Civil War occurred in 1642–51, and documents from the Clockmakers Company show that there was either no clockmaking activity or very few new clocks recorded in this period. Immediately afterwards, however, trade picked up rapidly,⁸ and by 1660 40 known clockmakers were trading in London. Prior to the Civil War, lantern clocks were mostly sold to the nobility and landowners. After the Civil War many of them lost their titles, land, and large houses in London and the countryside and also of course their interest in buying expensive clocks. In contrast those who prospered from the war were Cromwell’s advisors and those who had been involved in maintaining Cromwell’s army and navy. The 17th-century London diarist Samuel Pepys was one example of the group of people who became affluent during and after the Civil War. Since there were many who fell into this newly wealthy group, including a growing number of merchants, there was a much larger market for the relatively expensive lantern clocks.

Most of those who had thrived under Cromwell’s rule lived in a rapidly expanding mid-17th-century London. There were three main clockmaking areas in London at this time: around Holborn Bridge (which crossed the River Fleet), Fleet Street and Blackfriars, and Lothbury (an area near the modern-day Bank of England). Figure 5 shows Lothbury and the site of Thomas Loomes’s Workshop, the “Mermaid” at Bartholomew Lane, as it appears on an Agas map circa 1664.

This area was also recognized as having many metalworkers and founders casting and turning copper and latten (brass) products. One such founder’s mark on the Quelch clock is shown in Figure 6 behind the chapter ring (a similar location is shown by White⁹). While illegible, the mark is comparable to the shield-type marks illustrated by White.¹⁰

White proposes that many second-period lantern clock parts have similar founder’s marks, suggesting the existence of a significant trade in rough clock parts.¹¹ In contrast, a few lantern clockmakers appear to have been able to make their parts from brass castings in their own foundries (for example, Jeffrey Bailey and Peter Closon).

Dating clocks from this period by examining frets, the bell strap, dial engraving, movement, and so on, should be approached with caution. Clockmakers



The clock was received with modern two-hand gearing fitted .

Figure 2. The clock was received with modern two-hand gearing fitted. PHOTO BY GEOFF COX.



Figure 3. Side view, pre-restoration. Note the pinned door. PHOTO BY GEOFF COX.



Figure 4. Back view, pre-restoration. PHOTO BY GEOFF COX.

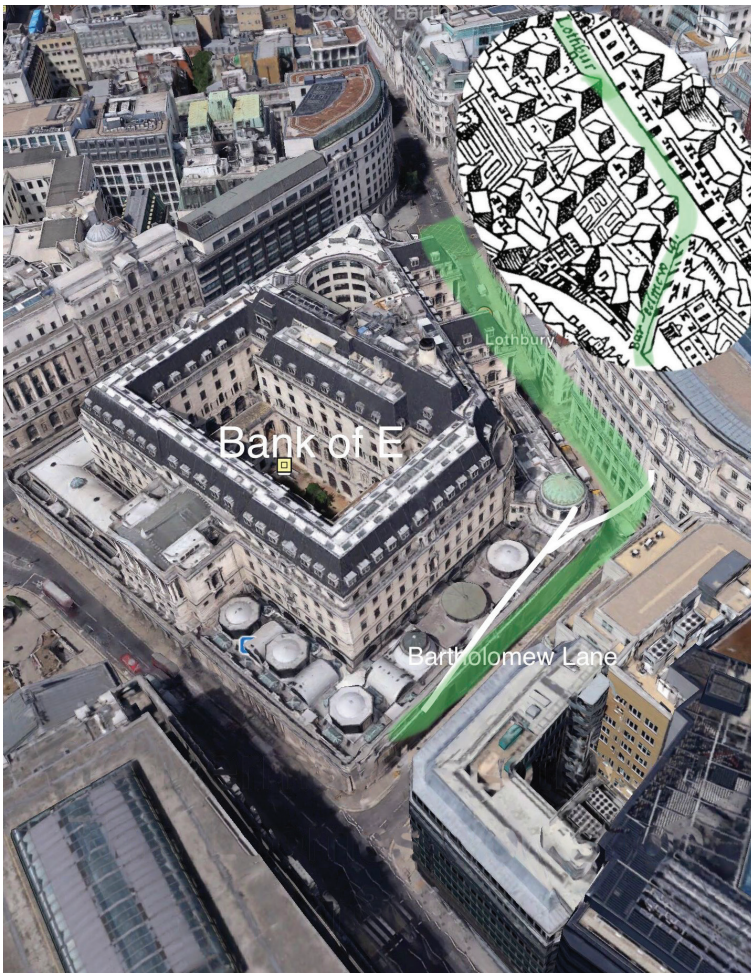


Figure 5. Lothbury and the site of Thomas Loomes's workshop the "Mermaid" as it appears on Agas map ca. 1664 and currently. IMAGE OVERLAYS BY GEOFF COX.

often brought in parts from foundries and other suppliers and may also have kept stock from earlier years. Even the engraving was sometimes done by other workers.

The following account considers important elements of the Richard Quelch clock and where and when they were likely to have been made.

The Dial

A clear difference between the form of the engraving found on first- and second-period clocks relates to the leaf-shading detail. The engraving of flowers in the second period is more naturalistic, following the direction of plant growth or the natural curve of leaves or petals. Although the form of second-period engraving was comparable to the first, rather than being presented as a scroll or wreath around the alarm disc, depictions of the tulip flower and leaves are shown as growing upwards from a central flower at the base to an upward-pointing flower.

The engraving on the Quelch clock dial is typical of the form used on some Lothbury clocks:



Figure 6. Founder's mark on the reverse side of the chapter ring. PHOTO BY GEOFF COX.

for example, those made by Henry Ireland, an established mid-17th-century lantern clockmaker.

The alarm disc is of the same period style as the clock and possibly original to the clock or alternatively re-engraved on period material. It is very similar to one fitted to a clock by Ireland made in 1650s.¹²

In contrast to first-period half-hour markers (which were usually free floating), second-period markers were simple or more complex variations of an arrowhead with a stem tying it to the minute circle. The Quelch clock has double-matchstick half-hour markers similar to those used on clocks from the 1650s, for example, Thomas Loomes's. The dials have recently been resilvered/lacquered appropriately as they appeared originally (Figure 7).

Frets

First-period and some second-period clocks generally display the maker's signature on the fret, while later clocks have the signature on the upper or lower dial center.¹³ This further suggests that the Quelch is a second-period clock. The crossed dolphin motif is also found on the side frets.

The semicircle on the front fret carrying the maker's name is particularly unusual (see Figure 7). It appears that the only other example of this arrangement is found on a lantern clock signed by Fromanteel (Figure 8). Fromanteel was made a full Freeman of the Clockmakers Company in 1656 by order of Cromwell, whose cause he had supported. As the first maker to offer pendulum-regulated clocks, advertising this feature in 1657, Fromanteel

changed the way society relied upon the domestic clock and timekeeping from that point forward. Figures 7 and 8 show frets from the two clocks.

Frame

There were two different forms of the columns in second-period clocks. The Quelch clock shows the concave form of the finials.¹⁴ This type was used by Ireland,¹⁵ Beck, and Fromanteel, all makers working during the second period.

A clock by Thomas Loomes from the 1650s has similar finials and acorn feet in the pre-Civil War style. Interestingly, Loomes worked very close to Ireland's workshop in Lothbury.¹⁶

Bell Strap

The design of the bell strap is markedly restrained in second-period clocks, and the very simple form

found on the Quelch clock is in keeping with the period. This is similar to one shown by White: a first-period bell strap conventionally fastened with a nut on a threaded top finial stud¹⁷ (the original finial had been shortened at some stage to fit a case or ceiling height).

The Movement

A detailed description of the going and striking train is not included here, but the layout and construction follow the same convention as other lantern clocks of the period. This design had been well established in the first period and continued virtually unchanged in subsequent 30-hour pillar and post frame clocks well into the 19th century. The striking count wheel is a single set of a 1-12 count as opposed to the double count wheel (two sets of 1-12) occasionally seen in earlier examples (presumably to increase the duration before rewinding).



Figure 7. Illustrating the Quelch signature on the front fret on the semicircular element. PHOTO BY GEOFF COX.



Figure 8. Same fret pattern and signature placement as seen in Figure 7, here signed by A. Fromanteel. PHOTO BY GEOFF COX.



Figure 9. Left side and rear showing the angled count-wheel slots. PHOTO BY GEOFF COX.

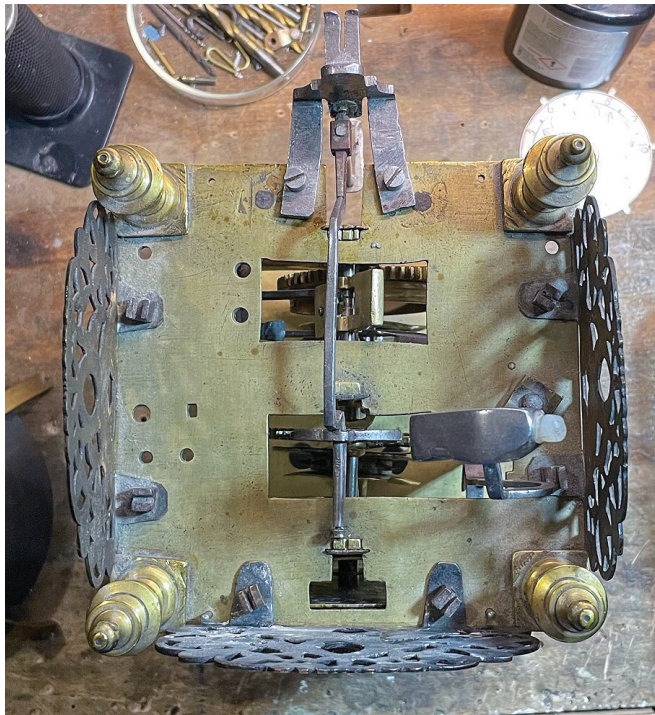


Figure 10. The top plate from above, including a number of unfilled holes originally used to carry the balance wheel mechanism, possible fly cover, and the two rear side holes for top hinge pins before the rear pillars. PHOTO BY GEOFF COX.

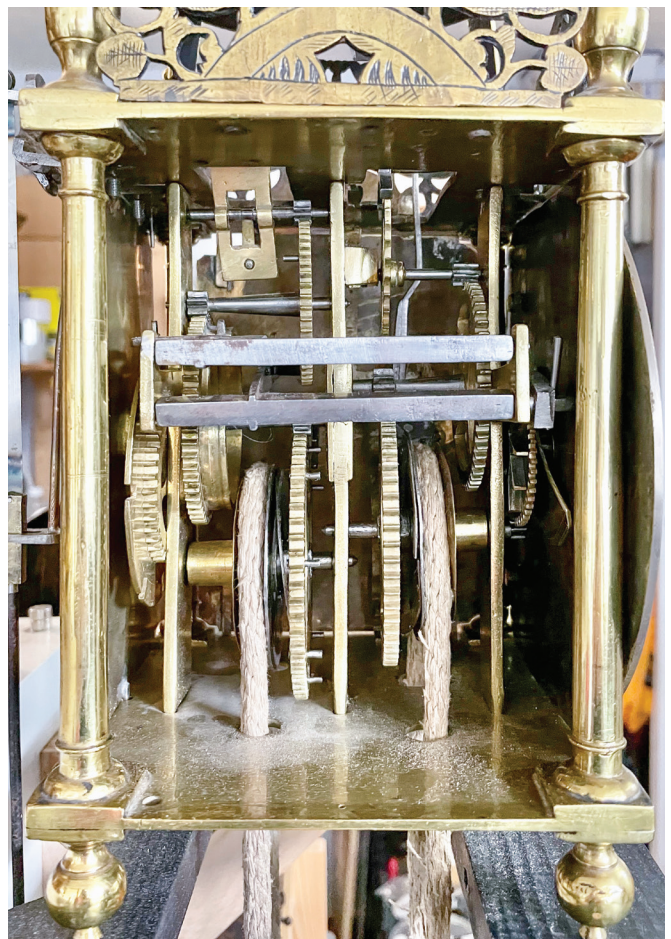


Figure 11. A view of the hammer spring and counter showing a chamfer on the latter, typical of second-period work. Note that the original stepped potence remains, supporting the escape wheel originally to clear the balance arbor.

One point of note is the shape of the hammer spring and counter (Figure 9). White illustrates a form that is very similar to the one found in the Quelch clock.¹⁸ This design typifies clocks made by William Sellwood (a maker of first-period clocks), which are examples of relatively undecorated components typical of pre-Civil War work.

The Quelch clock was originally fitted with a balance wheel, also typical of most second-period clocks. This is seen in the unblocked, empty holes in the top plate, also indicated by the hammer stop and hammer on the right side of the movement (facing the dial). Figure 10 shows the top plate of the Quelch clock, revealing several of these interesting features. The two filled holes at the rear of the plate edge opposite the front fret were originally used to secure a hoop, indicating that the clock was of the hoop-and-spike type. There are no holes for the two spikes at the back of the clock. They were most probably attached to the original backplate, now replaced.

The two holes to the left of the rectangular opening, through which the fly can be seen, may have been used to secure a cover. The group of four patent holes close to the left-side fret were probably used to secure the cock for supporting the balance wheel. Figure 10 also shows the front and rear cocks supporting the long pendulum, added later. Note the typical square-headed screws holding the frets in place. The two holes toward the rear of the side frets housed pins to hold the side door hinges.

Balance wheel-based clocks as a rule had their strike hammer, stop, and strike operation located on the left side of the clock (facing the dial; Figure 11). This arrangement allowed the independent train weights to fall on opposite sides of the frame without interference, retained in this example. Both anchor and verge pendulums are on the right side, allowing the use of the Huygens endless rope and a heavier single weight.

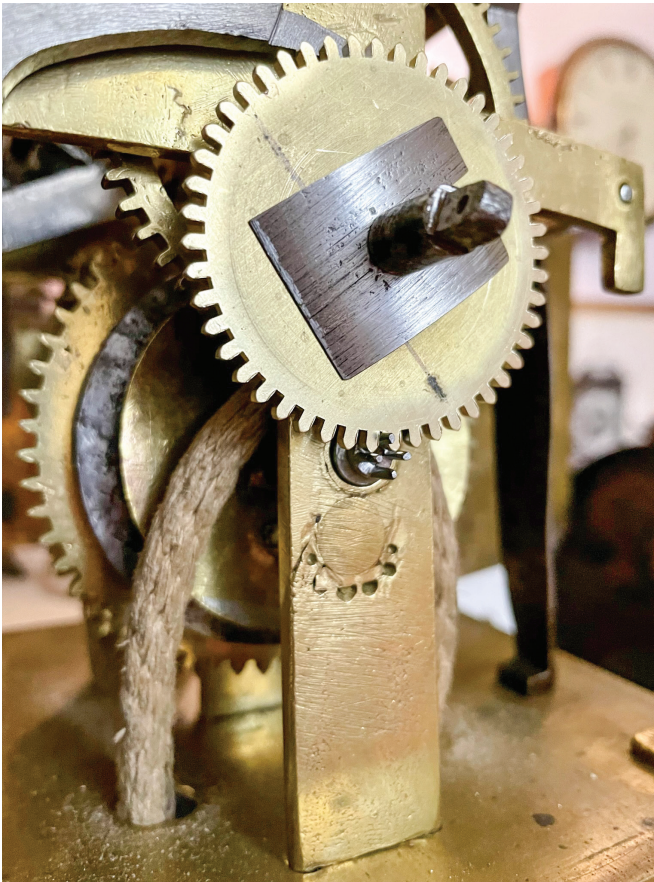


Figure 12. Replacement pinion of report/cut-down hour and star wheel assembly. PHOTO BY GEOFF COX.



Figure 13. Reworked doors that include hinges and a latch. PHOTO BY GEOFF COX.



Figure 14. The finished Quelch clock awaiting the second phase: the crown-wheel balance reinstatement. PHOTO BY GEOFF COX.

The style and execution of the conversion from the original crown wheel balance escapement to anchor-pendulum suggests an early 18th-century modification.

The gearing of the time train remains largely unchanged, with independently driven time-and-strike trains of the same short, approximately 10-hour duration as its original balance configuration. The resulting pendulum length is considerably shorter than the usual nearly 29".

The pinion of report driving the count wheel found in the Quelch clock (Figure 12) is comparable to those found in first-period clocks where the pinion filed directly from the end of the arbor. As with a Bowyer clock dated 1623, four leaves have been cut into the pinion.¹⁹ Later clocks had pinions of more leaves (usually six), and in third-period clocks the pinion was made of brass.

The doors that came with the clock are not original (Figure 13) and were possibly added when the escapement was converted. Someone went to considerable effort in engraving corner decorations patterned after those on the dial plate. This is somewhat in line with a Victorian Gothic Revival restoration of earlier antiques. They originally had soldered hinges then probably changed to pinned hinges when the clock was converted to two hands. The doors have now been restored to conventional fitting and operation.

The Clock Currently

When purchased, the Quelch clock was fitted with a long pendulum. It is likely that this was fitted 50 to 75 years after the clock was made. It was common practice to make this modification, since the long pendulum offered significantly better timekeeping than both the original balance wheel and the short pendulum. All British lantern clocks were fitted with a balance wheel before 1657, when the short pendulum was introduced to London. Salomon Coster of The Hague is attributed with having first used the short pendulum in commercial clockmaking. John Fromanteel, from an Anglo-Dutch family, is thought to have introduced the short bob pendulum to London.

Some makers continued fitting balance wheels after 1657, probably because they were familiar with that form of movement, and perhaps because the customers resisted the change.

About 40 years ago, someone removed the original integral arbor (great wheel) four-prong pinion of report and hour wheel/star and installed a two-handed system from modern components. Fortunately, the Quelch clock retains its original escapement train gearing and, therefore, gear ratios allowed the latter hand-gearing additions to be removed and period replacement components added to reinstate single-hand indication. However, the hour wheel had to be cut down from a period lantern movement original, with its smaller diameter and slightly reduced tooth size due to the 15mm raised great wheel from the two-handed gearing conversion. The restored clock is shown in Figure 14.

Conclusion

The approximate production date of the Richard Quelch clock may be established. Considering the form and origin of the clock components and the available evidence that Quelch was probably dead by 1653, it seems likely that the clock was manufactured just before or just after the English Civil War. It was likely made from at least some parts sourced from Lothbury clockmakers.

Future Balance Reinstatement: The Journey Continues

It has been demonstrated recently that correctly done verge balance regulation can achieve accurate timing (by fine-tuning its running weight) to within 1 minute per day, given a stable temperature.²⁰ Based upon review of the successful balance wheel reinstatements completed over the last few years by Geoff Cox, it has been decided to reinstate the balance to complete the restoration of the clock. A future *Bulletin* article will chronicle that journey. If you'd like a sneak peek of the clock in operation, visit <https://earlyclocks.uk/rquelch-balance-recon>.

Notes and References

1. C. F. C. Beeson, *Clockmaking in Oxfordshire*, 3rd edition (Oxford: Museum of the History of Science, 1989). Beeson notes a circa 1650 watch made by Richard Quelch, Ashmolean Museum, Oxford.
2. Beeson, *Clockmaking in Oxfordshire*, fig. 34, plate 19.
3. B. Loomes, *Lantern Clocks and Their Makers* (Mayfield, England: Mayfield Books, 2008) 491.
4. B. Loomes, "John Quelch of Oxford," *Clocks Magazine* (October 2010). Loomes mentions the sale of this John Quelch clock but doesn't mention where or when it came up for auction.
5. G. White, *English Lantern Clocks* (Woodbridge, UK: Antique Collectors Club, 1989), 257.
6. Loomes, "John Quelch of Oxford," 11.
7. Loomes, "John Quelch of Oxford."
8. White, *English Lantern Clocks*, 126.
9. White, *English Lantern Clocks*, 109, fig. 8.55.
10. White, *English Lantern Clocks*, 491.
11. White, *English Lantern Clocks*, 127.
12. White, *English Lantern Clocks*, 158.
13. Loomes, "John Quelch of Oxford."
14. White, *English Lantern Clocks*, 147, fig. 111/48.
15. White, *English Lantern Clocks*, 128.
16. Loomes, *Lantern Clocks and Their Makers*, 100.
17. White, *English Lantern Clocks*, 177.
18. White, *English Lantern Clocks*, 153, fig. 111/59A.
19. White, *English Lantern Clocks*, 153.
20. Personal communication from Brian Loomes to Geoff Cox regarding the Norris reinstatement performed by Geoff, 2017.

About the Authors

Stephen Barasi trained as a physiologist in London then for a higher degree in neuroscience in Edinburgh. He worked as an academic researching in the field of sensory neuroscience and teaching medical and science students. After retirement he became interested initially in 18th-century long case clocks then in English lantern clocks. He is particularly interested in linking early lantern clocks to the history of early and mid-17th-century London.

Geoff Cox has been interested and involved in early clocks since he was a student roaming museum collections and NAWCC events during summer holidays. Completing an education at Michigan State University, the work travel that followed allowed the opportunity to network with important collectors such as Norman Langmaid and others who were enthusiastic in sharing their collections and vast experience with early English clocks. After retiring from a commercial scientific career spanning the US and UK, he shares decades of restoration experience and knowledge with others though Earlyclocks.uk.