

# The Remarkable Career of a ‘Most Rare Workman’

Johan van der Wyck (1623-1679), a Dutch-educated Military Engineer and Optical Practitioner

## PART 1: In the Service of the Dutch Republic

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### Dutch Traces at a Foreign Location

The Swedish Skokloster Castle, in the countryside between Stockholm and Uppsala, holds a treasure of historical artefacts from the seventeenth century: paintings, tapestries, weaponry, scientific instruments, books and other curiosities, most of which has been brought together by one of its former owners, the Swedish army commander-in-chief Carl Gustaf Wrangel (1613-1676). Among the many portraits in the castle is a large picture of one of Wrangel's flag officers: the ‘Obrist’ Johan van der Wyck (1623-1679), a man of German noble decent, born near Münster, but educated in the Dutch Republic (Fig. 1).<sup>1</sup>

As recently has been discovered, Van der Wyck was one of the most prominent optical practitioners in the Netherlands in the early 1650s. He was for instance praised as ‘a most rare [optical] workman’ by Samuel Hartlib, one of the important ‘intellectual brokers of seventeenth century Europe’.<sup>2</sup> In the years 1654-1657 Van der Wyck lived and worked as a military engineer in Delft. Today, 17<sup>th</sup>-century Delft is known especially for its Delftware and for a group of very successful painters, the ‘Delft School’, renowned for the usage in their paintings of various mathematical and optical novelties.<sup>3</sup> This pictorial innovation started in – or shortly before – the year 1650, when the brewer-painter Geraerd Houckgeest (c.1600-1661) introduced a new kind of perspective in the paintings of his church interiors, which required a good insight into geometry and optics.<sup>4</sup> This innovative diagonal viewpoint inspired several others. Artisans such as Emanuel de Witte (1617-1692), Hendrick Cornelisz van Vliet (c. 1612-1675), Carel Fabritius (1622-1654) followed this new direction in painting. A decade later other painters continued to experiment with perspective and other optical effects in their depiction of Delft interiors. Best-known examples are Pieter de Hooch (1629-1684), Johannes Vermeer (1632-1675) and Cornelis Willemsz de Man (1621-1706).

Together with Marlise Rijks, I have discussed elsewhere the probable exchange of mathematical and optical knowledge between some Delft practitioners – among whom Johan van der Wyck – and some of these Delft painters.<sup>5</sup> We also discussed how Van der Wyck made



Fig. 1 ‘Obrist’ Johan van der Wyck (1623-1679). Portrait (88 x 109 cm) attributed to the painter Abraham Wuchters (1608-1682). In the upper right corner in red the inscription reads: ‘Obrister Wijk’. (Skokloster Castle, Inv. no. 3082).

excellent telescopes, microscopes and other optical equipment, such as a camera obscura and a kind of perspective box. In the construction of the latter, he must have received assistance from at least one of Delft's pictorial artists. This was an intriguing find, especially in view of the still ongoing discussion about Johannes Vermeer's presumed use of optical aids in the process of composing his paintings.<sup>6</sup> Since that publication, continued historical research has revealed much more about the life and career of this praised optician Van der Wyck. Below I will discuss his further career, and its implications for Van der Wyck's optical work.

### Youth

Johan van der Wyck was born in Germany, at Schloss Neuhaus near Osnabrück, in 1623, as ‘Johann von der Wieck’, the second son of Engelbert von der Wieck zu Neuhaus (1593-1653) and his wife Clara von Nehem. This couple would produce 15 (!) children, of which four sons and eight daughters reached adulthood. The Von der Wyck family belonged to a group of ‘Münsterischen Erbmäner’, whose nobility had very ancient roots.<sup>7</sup>

The family lived already for many generations on Schloss Neuhaus. The new-born Johan was named after a famous relative, Johann von der Wieck (c.1480-1534), who had been one of the forerunners of the Reformation. Eventually, as Syndicus of Münster, he was decapitated after the conquest of this city by the army of Münster's catholic bishop.<sup>8</sup> After this horrific event the Van der Wyck family returned to the Catholic Church. At least two of Johan van der Wyck's sisters lived as nun in a convent. According to a family rumour, noted down in the 18<sup>th</sup> century, Johan and his elder brother Adolph Heinrich broke with their family for religious reasons. It was said that they went to ‘foreign countries’, after their conversion to the Protestant faith. After that, their family never would have received any account of their whereabouts.<sup>9</sup>

After the departure from their native Neuhaus, both brothers chose for a military career: a rather typical choice for men of noble decent. The elder brother died already in 1643, in Antwerp, at the age of 25.<sup>10</sup> Johan finally enlisted the army of the Calvinist Dutch Republic. He settled in Breda where he married, Johanna van Horne van Brouhese, a lady with a distinguished lineage.<sup>11</sup>

### The Academy: Breda

In the cited paper Van der Wyck's whereabouts before Delft were still shrouded in mystery.<sup>12</sup> We could only pinpoint his arrival in Delft as close as ‘at some point between 1646 and October 1654’.<sup>13</sup> However, by lucky coincidence, a rare pamphlet emerged in the Kongelige Bibliotek of Copenhagen, which publication reveals important details about Van der Wyck's education in mathematics and optics.<sup>14</sup> The pamphlet, *Schutz-Schriefft des hochedelgeböhrnen gestrengen und mannhafften herrn h. Johan von der Wijck*, was published in 1663, and contains several signed testimonies concerning Van der Wycks life. Later, I will discuss the backgrounds for the publication of this pamphlet. Of relevance here is, that the *Schutz-Schriefft* reveals that in Breda Van der Wyck enrolled the *Collegium Auriacum*, belonging to the renowned Breda Illustrious School, founded and funded in 1646 by the Dutch Stadtholder Frederik Hendrik, with the purpose to train

young men from the country's elite for military and civil service.<sup>15</sup> One of the three curators of this prestigious academy was Constantijn Huygens the elder, who sent three of his own sons (Christiaan, Lodewijk and Philips) to this academy.<sup>16</sup> On the Breda campus students lived together with their professors, so their mutual interaction must have been close. One of these professors was the English mathematician John Pell (1611-1685), who served in Breda until 1652.<sup>17</sup> Pell was very skilled in mathematics and optics. He was also one of the early investigators of the telescope.<sup>18</sup> Pell's influence on Van der Wyck must have been considerable, both in mathematics as in (practical) optics. Because the *Schutz-Schrift* declares with respect to Van der Wyck that:

He has spent his time mostly in search of the right heavenly mathematics, in such a way that he barely came out of his chamber (which he had filled with all kinds of artfully constructed instruments, which he mostly had made himself), to mingle with others in public.<sup>19</sup>

Elsewhere the *Schutz-Schrift* presents a picture of Van der Wyck as a young man with "an art-loving mind", very eager to learn about "the ingenuity of the army, the politics and all other sciences".<sup>20</sup> Most interesting is also the testimony of some of Van der Wyck's friends from Breda, who had visited him afterwards in Delft. These friends were Henricus Bornius (1617-1675), professor of ethics and logic in Breda until 1653<sup>21</sup>, and Abraham Dircksz Santvoort (†1669), a painter, engraver and trader in Delftware, who in 1653 changed his



Fig. 2 Bonfire at the occasion of the visit of Princess Henrietta Maria Stuart with her son Prince William III to the Breda Collegium Aureanum in 1653. Copperplate etching by Abraham Dircksz Santvoort (1624-1669). (Rijksmuseum, Amsterdam).

career to become a Calvinist minister. One of Santvoort's copperplate etchings depicts a visit to Breda of Mary Stuart, the widow of the late Stadtholder Willem II, together with the young hereditary prince Willem III, in 1653. No doubt that this royal event has been witnessed by Van der Wyck and his spouse (Fig. 2).

Santvoort would also engrave the coat-of-arms of Van der Wyck's ancestors for the *Schutz-Schrift* (Fig. 3).<sup>22</sup>

Another friend who signed the Breda testimony was Jan van Vliet (1622-1666), town registrar of Breda, who in 1641 obtained a degree in law at Leiden University, and stayed active as a scholar all his life. Van Vliet, also known as Janus Vlietius, is still remembered as one of the 17<sup>th</sup>-century pioneers of comparative philology, establishing Gothic as origin of the Germanic languages.<sup>23</sup> In Breda Van Vliet became also friends with the Huygens brothers. One of his poems reflects this close friendship.<sup>24</sup> Because of his excellent knowledge of the English language, father Constantijn Huygens requested him in 1651 to accompany his son Lodewijk Huygens as a tutor to – then revolutionary – England, as member of a diplomatic mission.<sup>25</sup> Finally, Van der Wyck's *Schutz-Schrift* was signed by three military officers from the Breda garrison: first Erasmus van Falckenhaen, the military commander; then George Lauder, captain, and finally Joannis Scoda, lieutenant-colonel. Lauder and Scoda are also known as poets.<sup>26</sup> Summarizing all the statements, it is evident that during his stay in Breda, Van der Wyck was encircled by several persons with an inclination towards intellectual and artistic pursuits.

According to the *Schutz-Schrift* Van der Wyck matriculated in Breda in early 1650. Christiaan and Lodewijk Huygens had left the *Collegium Auriacum* in August 1649, so Van der Wyck missed them as fellow students by only a few months. However, younger brother Philips Huygens continued his study at the *Collegium Auriacum*, reason why Christiaan and his elder brother Constantijn had made their acquaintance with Van der Wyck, obtained during visits to their brother in Breda. This is obvious from a letter Constantijn Huy-

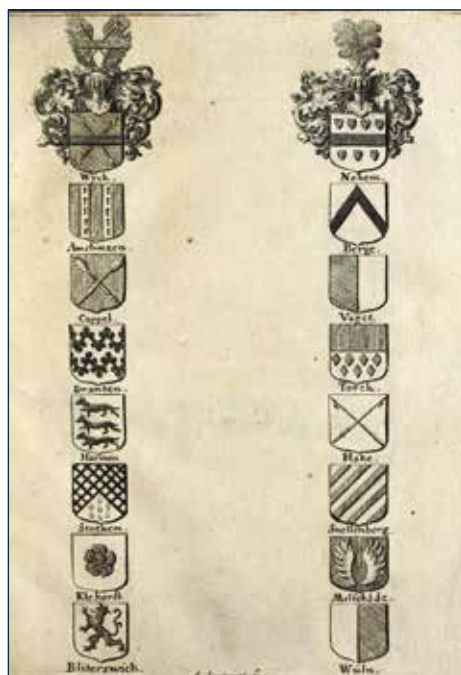


Fig. 3 (a) Title page of the *Schutz-Schrift*, issued by Van der Wyck in 1663, with (b) a copperplate engraving of the coat-of-arms of his ancestors, made by his Breda friend, Abraham Santvoort. (Kongelige Bibliotek, Copenhagen).



gens junior wrote to his brother Christiaan in August 1654. In this letter Constantijn informed Christiaan about a meeting he had with a small man ‘de vostre connoissance’, who lived in Breda, and who was continuously busy to grind lenses for telescopes and microscopes. ‘For heavens sake, what is his name’, he added to his brother. After which Constantijn continued:

[This man] entrusted me much of all he knew, and swore that with the lenses he made, one could see from Breda what time it was [at the church] in Dordrecht. He pulled out of his pocket a small spyglass for indoor usage, which was pretty nice, because we could read quite a small letter ten, or twelve paces away. But the problem was that the instrument was too large to be hidden in one’s hand. After I have seen his lenses in close up, I found that they are not polished that masterful. From his pockets, which resemble a store full of beautiful things, he also dugged up a microscope, made as the one I have myself, but much heavier. However, its lenses were worth not a big thing. I told him about your invention of small steel mirrors, without revealing to him what he desired to know with all his heart. It is a good little man, honest and telling you all he knows.<sup>27</sup>

At that time, in the summer of 1654, the two Huygens brothers had not yet really started with what would become their great mutual passion: grinding high quality telescope lenses. Obviously, in spite of Constantijn’s critical remarks, Christiaan desired to learn more about Van der Wyck’s lens grinding techniques. So, the Huygens brothers ordered a set of lenses by Van der Wyck, with the result that at the end of October 1654, Van der Wyck travelled from Delft to The Hague, in order to deliver a parcel containing two telescope lenses to the Huygens’ mansion. The accompanying letter provides us with Van der Wyck’s first remaining autograph (Fig. 4).<sup>28</sup> During the following year Huygens would discuss Van der Wyck’s work on several occasions with both his father and his brother Constantijn. Although Christiaan was sceptical about Van der Wyck’s abilities, he repeatedly urged his brother to investigate the microscopes of this Delft ‘polisher’ which showed ‘worms in the cream of milk, in flour and in the flesh of a hare’.<sup>29</sup>

### The City: Delft

The new information, presented above, implicates that Van der Wyck moved to Delft between 24 August and 27 October 1654. This means that, most likely, his relocation was a direct consequence of the *Delftse Donderslag* (‘Delft thunderstrike’), a huge explosion of the gunpowder repository of the States Gener-

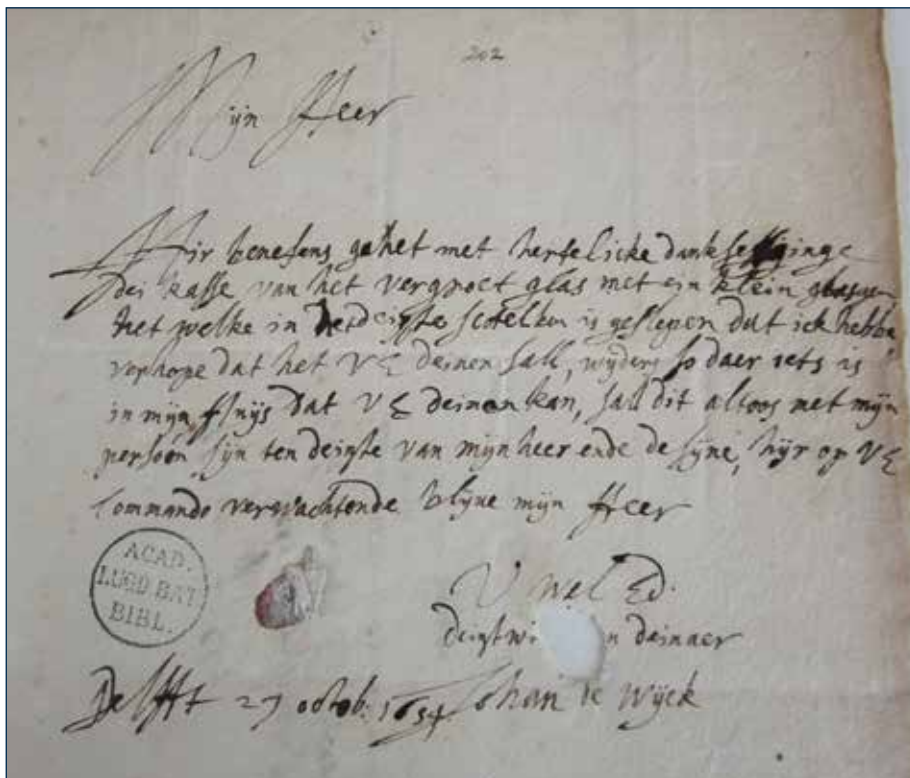


Fig. 4 Van der Wyck’s letter, dated Delft, 27 October 1654 to Christiaan Huygens in The Hague. In English translation the text reads: ‘With this letter, and with gratitude, I send you a case with the magnifying lens with a little glass, which I have grinded in the smallest dish that I have at my disposal, in the hope that this will be of some service to you. Further, if there is anything in my house that you can use, I personally will always be at your disposal of your lord, or your relatives. Expecting your command, I remain, sincerely your obliging servant, Johan [van] de[r] Wyck’. (Leiden University library).

al on the 12<sup>th</sup> October 1654, which blew away a large part of Delft’s inner city. This disaster killed more than a hundred people, including the painter Carel Fabritius (Fig. 5).

Before the blast, Delft had been one of the most significant military places of the Dutch

Republic. In 1572, shortly after the proclamation of the independence of the country, its supreme political organ, the States General, had selected Delft as the central place for the storage of their weaponry. This implicated that a gunpowder repository was built inside the city walls. It was this *Secreet van Holland*



Fig. 5 View of Delft after the gunpowder explosion (‘Donderslag’) of 12 October 1654. Painting by Egbert van der Poel (1621-1664). National Gallery London, Inv. no. NG1061.

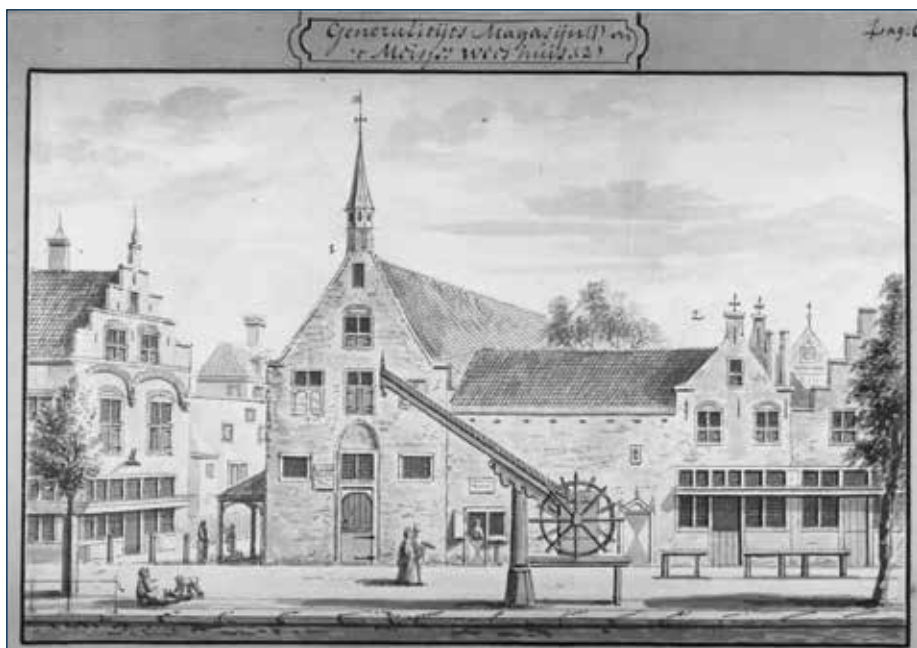


Fig. 6 Drawing of the Generaliteits Magazijn in Delft, the base of Van der Wyck's military activities (City archive Delft). The house at the left, at the other corner of the Nieuwstraat, was probably the workshop of the optician Evert Harmansz Steenwijck.

(‘Holland’s secret’), a place of crucial importance for the military strength of the country, that had exploded. So, in October 1654 the reorganization of the country’s military logistics required a large military deployment in Delft, obviously including Van der Wyck. After the blast, the only remaining repository of the States General was the *Generaliteits Magazijn*, a former catholic chapel, sequestered by the government after the Reformation, along the Oude Delft, one of Delft’s main canals.<sup>30</sup> So in the next years this building definitively was the base of Van der Wyck’s activities in Delft (Fig. 6).

By coincidence his new working place was very near to the workshop of the late Delft optician and early telescope maker Evert Harmansz Steenwijck<sup>31</sup>, who had died only shortly before, and whose children were seeking for a buyer of his goods.<sup>32</sup> Whether or not Van der Wyck bought his optical tools is unknown, but a connection between the two opticians was laid by Lieuwe van Aitzema, a well-known Dutch diplomat. For one of his clients, the German Duke August of Braunschweig-Lüneburg (1579-1666), Aitzema collected not only political information, but he also searched for collectibles to supplement the Duke’s *Kunstammer* in Wolfenbüttel.<sup>33</sup>

In this context, Aitzema had contacted the optician Steenwijck in 1650, with the request for a special telescope; to be more precise, Aitzema ordered for his German patron a walking cane with in it a hidden spyglass – (as far as I know the first of its kind to be recorded in literature), so this indeed was an interest-

ing gadget.<sup>34</sup> After the first contact with Van Steenwijck, things were not going as expected: ‘The man who makes telescopes in Delft is old and a bad liar, because he has repeatedly promised to deliver such a tube, but he does not keep his word’, a disappointed Aitzema wrote to his patron.<sup>35</sup> This complaint was repeated several times, so it is unclear if the desired optical walking cane was ever delivered.<sup>36</sup> At that time the optician Van Steenwijck was in his seventies. His wife had passed away not long before, and perhaps he was ailing himself, for he died in April 1654.<sup>37</sup>

When Aitzema heard this news a few months later, Van der Wyck already had appeared on the scene. To Aitzema’s good fortune, he could offer the Brunswick duke an alternative: ‘The telescope maker in Delft is dead. But there is another [man], who can make similar or the same [devices]. He is of noble descent, but nevertheless makes such works’.<sup>38</sup> Interestingly, Aitzema found it worth noting that manual practice was rather unusual for people from the higher social strata.

Already in August 1655, Van der Wyck’s optical skills were also noticed across the North Sea. Van der Wyck had given a remarkable optical demonstration before an audience in The Hague. This event was reported to Samuel Hartlib, a man with a wide-ranging interest in all kinds of science-related subjects, especially technological innovation in optics, and very much aware of the role of the Dutch Republic as a hub of knowledge. In August 1655 Hartlib wrote in his *Ephemerides* – a personal diary – about ‘an excellent Man at Delph in

Optics and glass-grinding, who begins now to make some rare works’.<sup>39</sup> Later he presented more details:

At [The] Haage now to bee performed by one paire of glasse in the window to represent and convey all the objects without upon the Streets upon the table in de middle of the roome. The inventor, as I take it, is Van der Wijcke, the Belgick Reeves<sup>40</sup> at Delfe, who makes all manner of Tubes and Microscopes excelling those of Braband. The Tubes hee fits to the sight of every ones age. [He is] a most rare Workeman.<sup>41</sup>

It is evident that Hartlib’s note describes some kind of projection device. More details of the optical devices made by this ‘most rare workman’ are revealed in the archives of the Brunswick Duke. In January 1655 Van der Wyck had boasted to Van Aitzema, that he had already delivered some optical playthings with rhombic glasses to ‘a foreign king’, as well as to a rich Amsterdam merchant. But now he could offer Duke August something very special: a recently invented device, never seen before. It was an optical show-box, a kind of peepshow, in which the viewer could witness the alteration of the architectural setting of an Italian *castello* with a background of mountains, into a naval piece revealing ships and mast. Van der Wyck’s muddled Latin description does not mention the working mechanism of the device, but it probably involved a kind of perspective box with a semi-transparent mirror and alternate lighting.<sup>42</sup> This description is a most interesting document, for the better-known perspective box emerged in the Netherlands in the late 1650s.<sup>43</sup> Today only six of these mid-seventeenth-century perspective boxes have survived, but none with an illusionistic arrangement as described by Van der Wyck.<sup>44</sup> But his devise evidently was a variant of such an apparatus, indicating that in building it he must have cooperated with at least one of the contemporary Delft painters. Van der Wyck’s remark to Aitzema that he only recently had invented the apparatus, even suggests that he was inspired by what he had seen and heard in Delft. It is suggested for instance, that Carel Fabritius’s *View of Delft*, painted in 1652, was intended for a perspective box.<sup>45</sup> Although Fabritius died before Van der Wyck’s arrival in Delft, it seems more than probable that the inventive Van der Wyck incorporated ideas that circulated among Delft artisans into devices of his own design. This, again, stresses the importance of the city as a location of knowledge, facilitating and stimulating the exchange of ideas, skills and objects.

In my earlier article on the Delft opticians, I have pointed to the remarkable geographical proximity of various Delft practitioners. Not only was Van der Wyck’s repository (see Fig.



7, no. 1) adjacent (or nearly so) to the former workshop of the optician Evert van Steenwijck (fig. 7, no. 2), he was also very near to another go-between, the Delft notary, surveyor and surgeon Jacob Spoors (Fig. 7, no. 4). This remarkable man was literally in the centre of a group of persons operating in Delft with a relation of some sort to mathematics, optics, chemistry, medicine or painting. Originally trained as a surgeon, Spoors knew the basics of anatomy and medicine; as a surveyor he mastered practical mathematics; as a *liefhebber* ('enthusiast') he performed observations and experiments; as a botanist he had a tulip named after him; as an author he wrote about natural philosophy; as an editor he doubled the text of a judicial textbook (in 1642 and 1658); and as a poet, he mourned the death of the famous Delft legal scholar Hugo Grotius (in 1645).<sup>46</sup> Spoors was also well connected with several Delft painters.<sup>47</sup> He evidently was one of Delft's prominent *liefhebbers*: a man well respected for his practical skills and theoretical knowledge. Spoors was also acquainted with the mathematical instrument maker Antony Sneewins, a logical connexion given the fact that Spoors also worked as a surveyor until an advanced age.<sup>48</sup> In 1676 Spoors produced all measurements for a large wall map of Delft, the *Kaart Figuratief*, in the making of which he measured the height of one of the Delft churches together with the surveyor and later microscopist Anthony van Leeuwenhoek.<sup>49</sup> All his life Spoors lived at the Oude Delft, close to Van der Wyck's *Generaliteits Magazijn*; perhaps even closer to his lodgings (Fig. 7, no. 3).<sup>50</sup> During Van der Wyck's Delft years they evidently became friends, as is proven by the fact that Van der Wyck in 1675, after his retirement from the Swedish and Holstein armies, travelled to Delft, specifically to have Spoors drawn up a new last will. By then Van der Wyck and his wife had settled in a mansion in Noordwijk (near Leiden), so their choice for Spoors as their notary can only be explained as a gesture 'for old times' sake'.<sup>51</sup>

When Van Aitzema, Huygens and Hartlib were aware of the remarkable optical products of Van der Wyck as *Perspectivmacher zu Delfft*, it can be taken for granted that Spoors, living only a few yards away, also knew of Van der Wyck's optical achievements.<sup>52</sup> Perhaps it was even Spoors who introduced Van der Wyck into the perspective box, or introduced him to his acquaintance, the painter Pieter de Hooch. Although archival or pictorial evidence is wanting, these guesses seems plausible. Was it indeed the (then) 26-year old Pieter de Hooch who assisted in Van der Wyck's project? He lived nearby (Fig. 7, no. 5) and was more-or-less of the same age as the (then) 32-year old Van der Wyck. Interestingly, De Hooch is renowned for his 'box-like

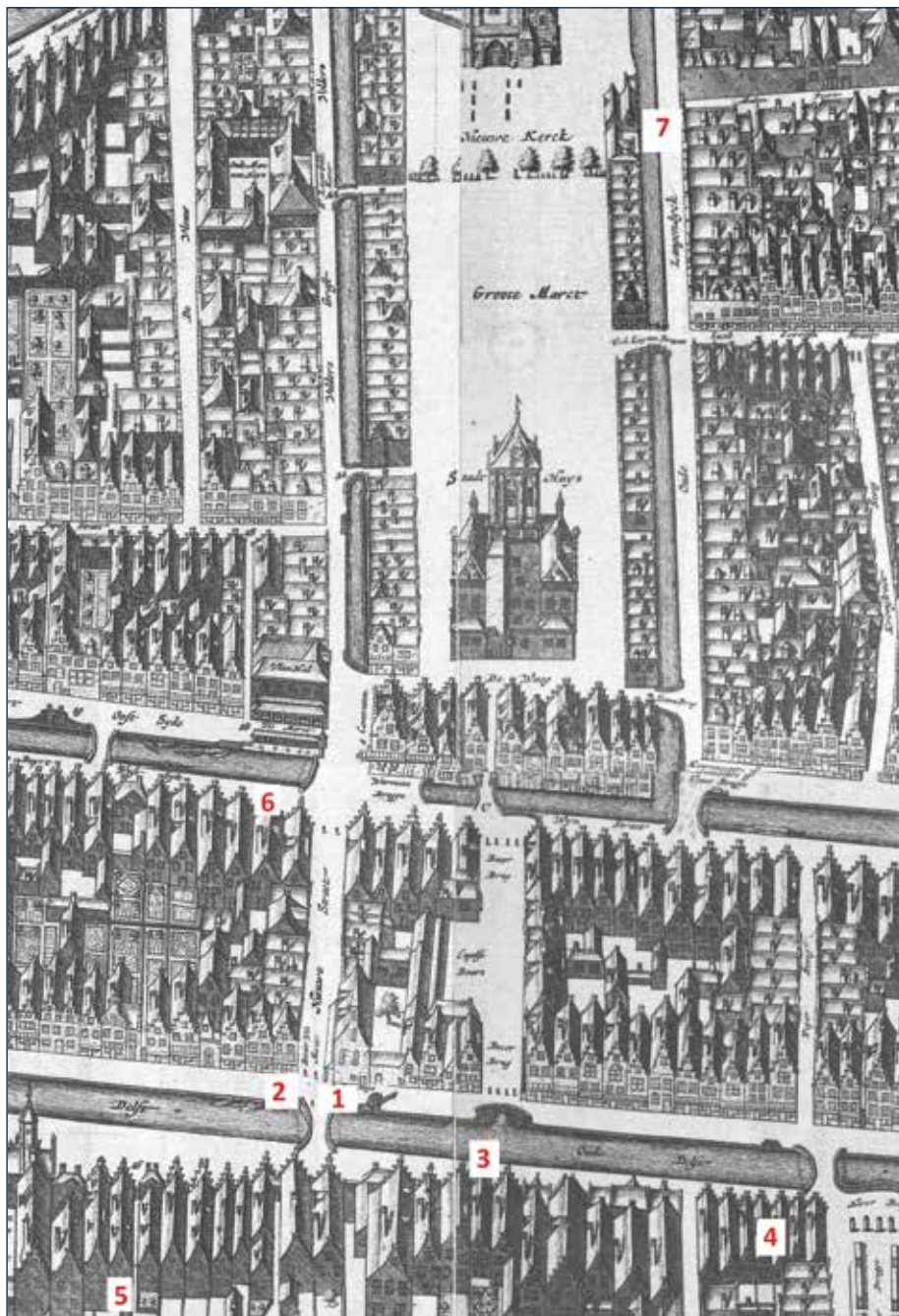


Fig. 7 Fragment of the 'Kaart Figuratief', a map of Delft, composed in the years 1675-1677 by the surveyor Jacob Spoors:

1. Military repository, the *Generaliteits Magazijn*, the headquarters of the military engineer Johan van der Wyck during his stay in Delft [1654-1657].
2. Probable optical workshop of the late Evert Harmansz Steenwijck (†1654).
3. House of Catharina Noté, daughter of an army officer. In 1680 she was the only Delft heir of Van der Wyck. So it is an educated guess that in the years 1654-1657 he and his wife resided in her house.
4. Residence of Jacob Spoors from 1650 until his death in 1677. Spoors was surgeon, surveyor and public notary. Most likely he was a go-between several Delft artisans.
5. Probable residence of the painter Pieter de Hooch in the years 1652-1660.
6. Residence of the microscopist Anthony van Leeuwenhoek from 1654 until his death in 1723.
7. Studio of the painter Johannes Vermeer from 1653 until his death in 1676.

chamber views' and his experiments with optical effects in his paintings.<sup>53</sup>

But there are also other candidates. Van der Wyck's friend Abraham Santvoort, for instance, who in 1663 declared to have visited Van der Wyck several times in Delft.<sup>54</sup> It seems unlikely that Johannes Vermeer (Fig. 7, no. 7), who entered the St. Luke Guild on 29 December 1653, cooperated with Van der Wyck, although it is tempting to think that Vermeer witnessed a demonstration of Van der Wyck's optical devices of a nature described by Hartlib. At such an optical performance, Vermeer could even have had company of the then still unknown Leeuwenhoek, who had returned to Delft that very year, settling close to the repository (Fig. 7, no. 6). At least Leeuwenhoek was in the neighbourhood when Van der Wyck made his Delft telescopes and microscopes, praised by Hartlib as 'excelling those of Brabant'.<sup>55</sup> Was Spoons perhaps their go-between? Unfortunately, we only can say that Spoons knew both stakeholders very well.<sup>56</sup>

Be this as it may, in June 1655 Aitzema paid the *Nobilis optici zu Delfft* a total sum of 310 'Reichsthaler' for a complete set of this optical equipment, on which Van der Wyck had worked for twelve weeks.<sup>57</sup> Van der Wyck received the order in spite of the fact that the descriptions he had sent to the Brunswick duke were not understandable to Johannes Wiesel, then the best known telescope and microscope maker in Germany, who had been asked for advice.<sup>58</sup> But after Aitzema's assurance that in Holland the Delft master had the reputation of being the best telescope maker, the duke had approved the order.<sup>59</sup> Apart from the optical show-box, this 'piece d'art', Van der Wyck's delivery included two telescopes with wooden tubes, containing five lenses each.<sup>60</sup> This number of lenses indicates that Van der Wyck followed the newly invented scheme for an eye-piece tube with multiple lenses, proposed in 1645 in a publication by Antonius Maria Schryrl de Rheita.<sup>61</sup> Compared to the earlier Dutch telescope with two lenses, such multiple lens arrangement provides a larger field of view, as is confirmed by Van der Wyck's statement that with his telescopes one could observe at one hour distance 'two cohorts of soldiers' instead of 'only half a man' as with the older telescopes.<sup>62</sup> This commission for the Brunswick Duke was one of Van der Wyck's last optical projects in Delft. Soon afterwards he would enter the service of the Swedish crown.

To be continued as Part 2 'In the Service of the Swedish King and the Duke of Schleswig-Holstein-Gottorp' in the December issue.

## Notes and References

1. An engraved portrait, with the Van der Wyck coat-of-arms and the legend: "Joan von der Wyck, S. Reg. Majestatis Regnorump. Sueciae per Germaniae Provincias et Exercitue Artiglerie Summus Tribunus" is mentioned in *De Navorscher* (1853), p. 315. Unfortunately, I have not been able to find this engraving.
2. Hartlib Papers, 29/5/29A-42B (41A-41B). Cf. *Samuel Hartlib and Universal Reformation*, eds, Mark Greengrass, Michael Leslie & Timothy Raylor (Cambridge, 1994).
3. Arthur K. Wheelock Jr., *Perspectives, Optics and Delft artists around 1650* (New York: Garland, 1977). See also: P.G. de Boer, *Enkele Delftse zeventiende eeuwse kerkportretten opnieuw bekeken* (Delft University: Ph.D. Dissertation, 1988), and Walter Liedtke, 'Delft Painting 'in Perspective': Carel Fabritius, Leonaert Bramer, and the architectural and townscape painters from about 1650 onward', in Walter Liedtke, Michiel C. Plomp & Axel Rüger, *Vermeer and the Delft School* (New York, 2001), pp. 98-129; See also Axel Rüger, *Vermeer and Painting in Delft* (London, 2001).
4. Wheelock, *Perspectives*; Liedtke, "Delft Painting"; De Boer, *Delftse kerkportretten*. See also Rochus J. van de Bergh, 'Gerard Houckgeest (±1600-1661), schilder en etser', *De Waterschans* 5 (1995), pp. 43-48.
5. Huib J. Zuidervaart & Marlise Rijks, "Most rare workmen: optical practitioners in early seventeenth-century Delft", *The British Journal for the History of Science* 48:1(2015), pp. 53-85 (published online: March 2014).
6. For an overview, see: Philip Steadman, *Vermeer's Camera. Uncovering the Truth behind the Masterpieces* (Oxford, 2001), and idem, 'Vermeer's Camera: afterthoughts, and a reply to critics' on [www.vermeerscamera.co.uk](http://www.vermeerscamera.co.uk); Wolfgang Lefèvre, ed., *Inside the Camera Obscura – Optics and Art under the Spell of the Projected Image* (Berlin: Max Planck Institut, 2007); Jonathan Janson, [www.essentialvermeer.com](http://www.essentialvermeer.com).
7. Rudolfine Freiin von Oer, 'Die Münsterischen Erbmänner', in: Helmut Richtering, ed., *Dreihundert Jahre Stiftung Rudolph von der Tinnen. 1688–1988* (Münster, 1988), pp. 1-14. In the Netherlands of the late 18<sup>th</sup>-century, the nobility of the Van der Wyck family was subject to discussion, but eventually in the newly founded Kingdom of the Netherlands the family was included in the Dutch nobility.
8. R. Stupperich, 'Dr. Johann von der Wyck. Ein münsterscher Staatsmann der Reformationszeit', *Westfälische Zeitschrift*, 123 (1973), pp. 9-50.
9. Statement made in 1773 by Maria Clara van

Oer, 87 years of age, since 1730 widow of Johannes Anastasius van der Wyck tot Neuhaus (c. 1670-1730), son of Johan van der Wyck's younger brother Conrad Lucas van der Wyck (1624-1707). She declared 'van wijlen haar gemaal, verscheidene malen gehoord te hebben, dat in het begin der XVIIe eeuw, en om den tyd van den aanvang des dertig jaarigen oorlogs, twee Ridderboortige, op het Goed Neuhaus geboorene, Adelyke zoonen, wier doopnamen zy thans niet weet, om het aannemen van het Protestantsch geloof, dat toen ter tyd in het ampt Reckenberg gehaat en vervolgd wierd, zig van hunne gemelde Adelyke geboorteplaats en naar vreemde Landen begaeven hadden, zonder dat ooit van de plaats van hun verblyf narigt ingekoomen was, of gezeide wylen haar gemaal, zyn vader of grootvader daar van eenige kennis bekoomen hadden'. *Nieuwe Nederlandsche Jaerboeken* 10:2 (1775), pp. 1036-1037. Indeed, it is striking that after the death of father Engelbert von der Wyck, in 1653, it was the third son Conrad Lucas van der Wyck who accepted the inheritance for himself, his younger brother Heinrich Otto, and his eight sisters. Evidently at that time the two older siblings were regarded as being dead; see W. de Morees, *Het Münsterse geslacht Van der Wyck* ('s Gravenhage: [n.publ.], 1911), pp. 41-42, 44, 138.

10. Statement of Anna Katharina von Salm-Reifferscheidt (1624-1691), widow of Johann II von Ostfriesland-Rietberg (1590-1660) in: *Schutz-Schrift des hochedelgebohrnen gestrengen un mannhafften herrn h. Johan von der Wijck, gebohren auss dem vornehmen adelichem Stamm der Wiicken von Newenhaus in Westphalen, itziger Zeit [...] Obristen wie auch der Stadt [...] Stralsund Commendanten* (Stralsund: Joachim Reuman, 1663), p. B ii. Only known copy: Kongelige Bibliotek, Copenhagen.

11. Her family descended from a branch of the medieval house of the Brabant Counts of Horne; see G.C.A. Juten, 'Van Bruhese en aanverwante geslachten, Bredasche tak', *Taxandria* 41 (1934).

12. Johan [van] de[r] Wyck to Christiaan Huygens, 27 October 1654. (Leiden University Library HUG 45/202 = Huygens, *Œuvres complètes* ('s-Gravenhage: Nijhoff, 1888-1950), letter no. 202.

13. Van der Wyck is not mentioned in the long file of customers (in 1646) of the Delft brewery of Isaac Elsevier, whereas the optician Evert Harmansz Steenwyck and one of Van der Wyck's closest friends (Eleazar Lotius, Calvinist pastor in The Hague) are listed. (ONA Rotterdam 145/306).

14. *Schutz-Schrift*.

15. For the history of the Illustrious School at the *Collegium Auriacum*, see D. Langedijk,



'De Illustre Schole ende Collegium Auriacum te Breda', *Taxandria*, 41 (1934) and 42 (1935); G. van Alphen, 'De Illustre School te Breda en haar boekerij', *Tijdschrift voor Geschiedenis*, 64 (1951), pp. 277-314; Stanislaw Kot, 'Polen in Breda in de 17e eeuw', *Jaarboek De Oranjeboom*, 7 (1954), pp. 91-114; F.R.L. Sassen, 'Levensberichten van de hoogleraren der Illustre School te Breda', *Jaarboek De Oranjeboom*, 19 (1966), pp. 123-157.

16. Lodewijk Huygens was forced to leave the Breda Academy in 1649, after getting involved in a duel. His brother Christiaan also left at that occasion. Only Philips Huygens stayed until c. 1651.

17. Cf. Noel Malcolm & Jacqueline Stedall, *John Pell (1611-1685) and his correspondence with Sir Charles Cavendish. The Mental World of an Early Modern Mathematician* (Oxford, 2004), pp. 119-122. See also: Sassen, 'Levensberichten', pp. 136-138.

18. Cf. Pell's investigative description of a 'tubus opticus or perspective trunke' (i.e. telescope) lent to Pell by Robert Long in 1639. British Library, London, Add. Mss. Add MS 4474, Imperfect, ff. 76-77.

19. 'Er hat aber seine Zeit meistens in durchsuchung der recht himlischen Mathematique zugebracht, so dasz er kaum ausz seiner Kammer (die er von allerhand kunstlichen un von Ihm selbst verfertigten Instrumenten angefullet) in offentliche Versammlung unter Leute gehen woollen', *Schutz-Schrift*, p. [4].

20. 'Da dann unser herr von der Wijck in dem 1650sten Jahre mit seinem Ehegemahl (welche er ausz dem Uhralten und renomierten hause Hornes von Bruhese geheijrathet) in die Ensamkeit nacher Breda begeben, damit er an selbigem Orthe, als der an furtreflichen ingeniis der Militz und Polices auch allen andern Wissenschaften keinen Mangel wuste, desto mehrer Bequemligkeit hatte, sein Jugend und Kunstliebendes Gemuth vollkommen zu machen', *Schutz-Schrift* (1663), p. [4].

21. In 1653 Henricus Bornius obtained a similar chair at Leiden University. His brother Arnold was a Calvinist minister in Delft between 1653 and 1666. In November 1655, during a stay in Delft, Henricus Bornius made his last will in front of the Delft notary J. van Santen. Cf. Sassen, 'Levensberichten', pp. 140-144.

22. [H.] Schneider & G.C.A. Jutten, 'Abraham Santvoort, graveur en predikant', *Taxandria*, 36 (1929), pp. 187-192; *NNBW*, 10, kol. 843.

23. Jan van Vliet was a nephew of Jacob Cats, the *Raadpensionaris* (prime minister) of the Dutch Republic. As this uncle he was a staunch Calvinist. As former student of the great Leiden classicist Daniel Heinsius, Van

Vliet remained good friends with his son, the librarian-diplomat Nicolaas Heinsius, maintaining a long lasting mutual correspondence. A collection of 55 letters exchanged between Heinsius and Vliet is printed in: Pieter Burman, ed., *Sylloges epistolarum a viris illustribus scriptarum*, Vol. 3 [Janus Vlietius] (Leiden, 1727). See also Cornelis Dekker, *The Origins of Old Germanic Studies in the Low Countries* (Leiden / Boston, 1999), chapter 2.

24. Van Vliet also composed a poem at the occasion of the visit, in 1653, of the Stadtholderly family, which poem was printed together with an allegoric illustration made by Santvoort. See: J. van Vliet, *The muses welcome to their Highnesses the Royal Princes Mary & the hopeful Prince William Herry, at their Highnesses Entrie in Breda, the 10th June 1653* (Rijksmuseum). Van Vliet and Santvoort worked often together. In 1664 they also issued the *Bredaesche Alamanac*. Van Vliet made other *Odes* for Christina, former Queen of Sweden, and for his friend Henricus Bornius, when he left the Breda Academy. Cf. Dekker, *Origins of Old Germanic Studies*, p. 81, 148. Sassen, 'Levensberichten', p. 143; Huygens, *Œuvres complètes*, letter no. 521, d.d. 28 September 1658.

25. Lodewijck Huygens, *The English Journal, 1651-1652*, eds, Alfred G.H. Bachrach & Robert G. Collmer (Leiden, 1982), pp. 13-15.

26. In 1649 Joannes Scoda made a poem for the disputation of the Polish student J. Wylam Kaliszany. Cf. Kot, 'Polen In Breda', p. 107. Especially Lauder, a Scottish royalist in exile, had a reputation as author of several Latin poems. In 1666, for instance, after Van Vliet's death, Lauder composed an epitaph on him, entitled *Tumulus viri incomparabilis Jani Vlietii syndici Bredani* (Breda, 1666); see Dekker, *Origins of Old Germanic Studies* p. 60note. Lauder is called 'Count of Norwich' at a baptism in Breda on 25 May 1653 (Breda archive). He is also the author of the large poem *Caledonias Covenant. Or ane Panegyrick to the World. Wherin is brieflie set doune the trew caus and occasioun of the present troubles of the kingdome of Scotland* (n.pl., 1641). In 1669 George Lauder composed a poem for Constantijn Huygens. Cf. J.A. Worp, ed., *Briefwisseling Constantijn Huygens* (Den Haag, 1916), no. 6712.

27. Constantijn Huygens jr. to Christiaan Huygens, 24 August 1654. Christiaan Huygens, *Œuvres complètes*, letter no. 198.

28. Johan van der Wyck to Christiaan Huygens, 27 October 1654: 'Hir benefens gehet met hertelicke danksegginge die kasse van het vergroet glas met ein klein glasgen, het welke in het deipste scotelken is geslepen dat ick hebbe, verhope dat het VE. deinen sall, wijders so daer iets is in mijn Huijs dat VE. deinen kan, sall dit altoos met mijn persoon

sijn ten deinste van mijn heer ende de sijne: hijr op VE. commando verwachtende blijve mijn Heer V wel Ed. deinstwilligen deinaer Johan [van] de[r] Wyck'. (Leiden University Library HUG 45/202 = Huygens, *Œuvres complètes*, letter no. 202).

29. *Op. cit.*, letter no. 236 (Christiaan to Constantijn jr, 1 October 1655); See also letter nos. 233 (Constantijn Huygens jr to Christiaan, 2 september 1655); 235 (Christiaan to Constantijn sr, 24 September 1655) and 242 (Constantijn Huygens jr to Christiaan, 28 October 1655).

30. W.A. Feitsma, 'Delft, de wapenkamer van Holland', in H.L. Houtzager [et al], *Kruit en Krijg. Delft als bakermat van het Prins Maurits Laboratorium* (Amsterdam, 1988), pp. 147-163.

31. Evert Harmansz Steenwijck lived in Delft at the Oude Delft, at least from 1634 (when his daughter Willempgen married), until his death in 1654. He rented his lodgings, for he is not mentioned in the Delft 'Huizenprotocol' or in any other housing register, such as the 'Verponding' registers of 1620 and 1636. In the surviving documents an exact location is not given. However, Evert Harmansz 'brillemaecker' was very frequently used as a notary witness, first (between 1614 and 1618) by the Delft notary Cornelis Couckebacker (Oude Delft no. 108), and later (between 1619 and 1633) by the Delft notary Dirck de Haen (Oude Delft no. 120). Therefore, he must have been at hand whenever they needed a witness. This means Evert Harmansz rented a house very nearby. De Haen's house at the corner of the Nieuwstraat (a double house) was owned later by five children Steenwijck, who sold it in 1736. (Cf. Delft Archive, Huizenprotocol, fol. 380, 782, 924).

32. In April 1654 Evert Harmansz's heirs were commissioned to sell his goods. (Notary Johan van Ophoven, Delft, 28 April 1654). Deed partly printed in A. Bredius, 'De schilders Pieter en Harmen Steenwijck', *Oud Holland* 8 (1890), pp. 143-148.

33. See for Aitzema's role as an agent for Duke August: Marika Keblusek, *Boeken in de Hofstad. Haagse boekcultuur in de Gouden Eeuw* (Hilversum, 1997), chapter 7.

34. To my knowledge this is the first mention of such a device: 'tubus opticiens (oder perspective), pour servir aussij de baston [= baton]'. In the 18<sup>th</sup> century walking canes with a hidden spyglass became rather common. Cf. Lieuwe van Aitzema to the Duke August of Braunschweig-Lüneburg, undated [March 1650, according to the letter's content] (Herzog August Bibliothek, Wolfenbüttel, 82 Novi, fol. 395: post scriptum). Courtesy to Marika Keblusek, for her generosity of providing me with her notes from the Aitzema

correspondence.

35. Van Aitzema to Duke August, undated [1650, according to the letter's content] HAB MS 82 Novi, fol. 405.

36. HAB MS 82 Novi, fol. 404 & 407.

37. Evert Harmansz Steenwijck 'brillemaecker' was buried in Delft in the Old Church on 23 April 1654. His wife Annetgen Pieters Bailly had preceded him into the grave six years earlier, on 8 February 1648.

38. Van Aitzema to Duke August, 5 Jan. 1655: 'Zu Delfft die perspectiven maister ist tod. Da ist ein andere die eenliche, ob gleiche sin wird, und Von adel ist, dennoch auch diese arbeit machet'. Niedersächsisches Landesarchiv Wolfenbüttel, 1 Alt 6, nr. 124, fol. 57.

39. Hartlib Papers, 29/5/29A-42B (40A).

40. By expressing Van der Wyck as 'the Belgic Reeves', Hartlib gave a huge compliment. Richard Reeve(s) was the first optical instrument maker in England, constructing high quality telescopes from about 1644 until his death in 1666. Cf. A.D.C. Simpson, 'Richard Reeve – The English Campani – and the origins of the London Telescope-making tradition', *Vistas in Astronomy*, **28** (1985), pp. 357-365.

41. Hartlib Papers, 29/5/29A-42B (41A-41B).

42. Van der Wyck to Van Aitzema, 31 May 1655 (HAB 376 Novi fol.9r-9v). Courtesy to Leo Nellissen for the translation from the Latin.

43. S. Koslow, 'De wonderlijke Perspectiefkas. An aspect of seventeenth century Dutch Painting', in *Oud-Holland*, **82** (1967), pp. 35-56. David Bomford, 'Perspective, Anamorphosis, and Illusion: Seventeenth-Century Dutch Peeps Shows', in *Vermeer Studies*, eds, Ivan Gaskell & Michael Jonkers (London / New Haven, 1998), pp. 125-135.

44. Agnes Verweij, 'Perspective in a box', *Nexus Network Journal*, **12** (2010), pp. 47-62; Kirsti Andersen, *The Geometry of an Art. The History of the Mathematical Theory of Perspective from Alberti to Monge* (New York: Springer, 2007), pp. 309-319; Thijs Weststeijn, *The Visible World: Samuel van Hoogstraten's Art Theory and the Legitimation of Painting in the Dutch Golden Age* (Amsterdam: University Press, 2008), pp. 304-311.

45. W.A. Liedtke, 'The View in Delft by Carel Fabritius', *Burlington Magazine*, **118** (1976), pp. 61-73.

46. In 1645 Spoors published a memorial poem for the Delft born law scholar Hugo de Groot (or Grotius): *Lyck-klacht over 't droevigh overlijden van sijn excellentie Hugo de Groot, ghesant van de croon Zweden aen den alderchristelicksten coninck van Vranckrijck. Overleden tot Rostock den xvij. van*

*oogst-maendt 1645*, Delft: Jan Pietersz Waalpot, 1645. In 1658, at the request of Waalpot's son Abraham (then his neighbour), Spoors edited and enlarged a new edition of Hero van Schingen's, *Corpus juris, ofte kort begryp van alle titulen van de 50. boecken Digestorum Justiniani* (Delft: Jan Pietersz & Abraham Waelpot, 1658).

47. Zuidervaart and Rijks, 'Most rare workmen' (note 5), p. 74-76.

48. In 1648 Anthonij Sneewins was an 'oorlosymaecker' (watch maker) at the Buikwatersloot in Delft. Shortly afterwards he started also making mathematical instruments. In 1656 he called himself a 'mathematical instrument maker'. He executed deeds before Jacob Spoors on 16 March 1656; 24 January 1659; 11 November 1660 and 10 January 1676. (ONA Delft).

49. H.L. Houtzager [et al], *De Kaart Figuratief van Delft* (Rijswijk, 1997).

50. Johan van der Wyck and his wife Johanna Van Hoorn van Brouhese probably rented lodgings in the house of Catharina Noté (1622-1682), daughter of Samuel Noté (d. 1648), 'kwartiermeester-generaal' of the cavalry. In 1680 she was the only Delft heir of the Van der Wyck-couple. With her sister Lowijsa (1633-1658), Catharina Noté lived at the Oude Delft across the Boterbrug, where the unmarried sisters had a shop. (NA Den Haag, Notary Van Adrichem, 3 April 1680; Notary Van Deuterom, 20 June 1680).

51. ONA Delft, 1681, fol 51, 5 June 1675.

52. In June 1655 Van Aitzema visited 'der Perspectivmacher zu Delfft'. Cf. Inge Keil, *Von Ocularien, Perspicillen und Mikroskopen, von Hungersnöten und Friedensfreuden, Optikern, Kaufleuten und Fürsten. Materialien zur Geschichte der optischen Werkstatt von Johann Wiesel (1583-1662) und seiner Nachfolger in Augsburg* (Augsburg: Wißner, 2003), p. 186.

53. Heidi de Mare, *Het huis en de regels van het denken. Een cultuurhistorisch onderzoek naar het werk van Simon Stevin, Jacob Cats en Pieter de Hooch* (Amsterdam University: Ph.D. dissertation, 2003), chapter 4. See also M. Kersten, 'Pieter de Hooch and Delft genre painting 1650-1675', in *Delft Masters, Vermeer's Contemporaries: Illusionism Through the Conquest of Light and Space*, eds, M. Kersten [et al] (Zwolle: Waanders, 1997), pp. 129-210.

54. Other Delft painters likely to have contributed to a perspective box are Leonaert Bramer (59 years of age in 1655) and the then 44-years old Hendrick Cornelis van Vliet. Anthonie Palamedesz (1601-1673) is also an interesting candidate. He is well known for his paintings of military men, and in one of his paintings he even depicted a telescope Cf.

Zuidervaart and Rijks, 'Most rare workmen' (note 5), pp. 70-72.

55. In 1653 Anthony van Leeuwenhoek bought the house, called 'Het Gouden Hoofd' (The Golden Head) at the corner of the Nieuwstraat and the Hypolytusbuurt. [Nieuwstraat 16 = 034C151]. He lived here the rest of his life.

56. Vermeer's mother in law, Maria Thins, used Jacob Spoors as her notary on 15 July 1649 and 31 March 1674. The last deed was co-signed by 'Sr. Johannis Vermeer, Mr. Schilder'. Cf. J.M. Montias, 'Vermeer and his milieu. Conclusions of an archival study', *Oud Holland*, **94** (1980), pp. 50, 62.

57. Duke August to Van Aitzema, The Hague, 16 June 1655. HAB 376 Novi, fol. 6r-8v, printed in Keil, *Ocularien* (note 52), pp. 186-187. The price of a telescope was 80 "Reichsthaler".

58. Keil, *Ocularien* (note 52), p. 184: [January 1655]: 'Er Wisel würt EFD selbsten schreiben, und so wohl dieser Brillen, als des optici zu Delfft heraus, gesanten Kunstzetels, den er zwar übel lesen khan, allen bericht geben'. Cf. Inge Keil, *Augustanus Opticus. Johann Wiesel (1583 bis 1662) und 200 Jahre optisches Handwerk in Augsburg* (Berlin: Akademie Verlag, 2000).

59. Van Aitzema to Duke August: [undated], 'Le maitre a Delft a la reputation de le faire les mieux, mais il fait a chacun selon son prix'. HAB MS 82 Novi, fol. 202vs.

60. A hardly readable German translation of a lost Latin description of Van der Wyck's two Brunswick telescopes, is preserved in: HAB 83 extrav., fol. 413r-413v [29 January 1655]. See for the dispatch of the *piece d'art* HAB MS 82 Novi, fols 253 (undated, but according to the content May 1656).

61. For Schryrl de Rheita, see Keil, *Augustanus Opticus* and Rolf Willach, 'The Development of Telescope Optics in the Middle of the Seventeenth Century', *Annals of Science*, **58** (2001), pp. 381-398.

62. Van der Wijck to Van Aitzema, 31 May 1655 (HAB 376 Novi fol.9r-9v).

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