

HISTORICAL EXAMPLES OF LOBBYING: THE CASE OF STRASBOURG ASTRONOMICAL OBSERVATORIES

ANDRÉ HECK
Observatoire Astronomique
11, rue de l'Université
F-67000 Strasbourg, France
andre.heck@astro.unistra.fr

Abstract. Several astronomical observatories have been established in Strasbourg in very differing contexts. In the late 17th century, an observing post (scientifically sterile) was put on top of a tower, the Hospital Gate, essentially for the prestige of the city and the notoriety of the university. In the 19th century, the observatory built on the *Académie* hosting the French university was the first attempt to set up in the city a real observatory equipped with genuine instrumentation with the purpose of carrying out serious research, but the succession of political regimes in France and the continual bidding for moving the university to other locations, together with the faltering of later scholars, torpedoed any significant scientific usage of the place. After the 1870-1871 Franco-Prussian war, the German authorities set up a prestigious university campus with a whole range of institutes together with a modern observatory consisting of several buildings and hosting a flotilla of excellent instruments, including the then largest refractor of the country. This paper illustrates various types of lobbying used in the steps above while detailing, from archive documents largely unexploited so far, original research on the two first observatories.

1. Introduction

Lobbying can be defined in various ways. My acception here will be a simple, general one: influencing people (including public officials) for or against a specific cause. We all “lobby” in a way or another in our life and especially in the context of our career: for securing a position for ourselves or others, for ensuring the success of an application for funding or observing time, for supporting the progress of ideas, projects, policies, etc.

Lobbying can be carried out by individuals, openly or behind the scenes (as or through *éminences grises*), or by groups, by organizations, and even by states. Targets can be individuals, groups, organizations and countries via their governing bodies. Exact motivations for lobbying are not always explicit. They can be understood at best by a good perception of all their ins and outs, and especially of the socio-historical context of the time.

While detailing original historical research, this paper will offer various examples of lobbying linked to successive astronomical observatories established in Strasbourg:

- a dual lobbying (military and scientific) by a 17th-century scholar to ensure funding for a study trip in Northern Europe;
- the lobbying initiated by the same scholar for establishing an observing post on top of a tower in the city walls and in the course of which the only arguments recorded in the proceedings were the prestige of the city and the notoriety of the university; this facility has been unproductive;
- insistent lobbying, including a modern approach (audit, etc.), to set up an observatory equipped with genuine instrumentation and the purpose of carrying out research on top of a university building, the 19th-century French *Académie*; some adverse lobbying and the succession of political regimes in France prevented any scientific output before the Franco-Prussian War of 1870-1871 at the outcome of which Strasbourg became German;
- political lobbying at the highest level in Germany leading, as a consequence of the conflict just mentioned, to a new university in the city, including a multi-building observatory equipped with a whole range of excellent instruments and the then largest refractor in the country;
- international lobbying establishing a local astronomical data facility as a center of excellence on the world stage.

The archive documents mentioned in this paper are referenced as ADBR (for the *Archives Départementales du Bas-Rhin*), AdP (for the *Archives de Paris*), AVCUS (for the *Archives de la Ville et de la Communauté Urbaine de Strasbourg*), DK-RA (for the Danish Royal Archives) and DK-RB (for the Danish Royal Library), followed by the folder number and/or corresponding date. Translations are mine.

2. Strasbourg “First” Observatory

2.1. THE HOSPITAL GATE

Strasbourg Hospital Gate is one of the very few extant remnants of the old city walls. It houses today a water tank (no longer in use) for the adjacent hospital, as well as a small meeting room, a few offices and storage areas for some hospital services. The tower features at its top a *lanternon* (turret lantern), identified as the first astronomical observatory of the city

built in the second half of the 17th century. Local historians and amateur astronomers have been repeating this over and over in all kinds of publications, often quoting each other and without proper historical referencing.

Going back to original documents in archive vaults, I therefore decided to investigate that *lanternon* in the context of the time and from the point of view of a professional astronomer interested in the inventive progress of our science, as opposed to the stand taken by some historians more attracted to, say, anecdotal facets of astronomy or an amateur's perspective.

The historical complex of Strasbourg Hospital Gate, most likely built in the first half of the 14th century, has been described by others (see *e.g.* Waton *et al.* 2000, as well as the references therein). The current paper is concerned only with the inside, higher tower, the only element remaining today. I obtained the authorization to visit the turret several times with the assistance of the hospital security team. It is in reasonably good shape if one ignores a layer of pigeon excrement and the bodies of a few dead birds. This octagonal turret has an approximate diameter of 265cm, each side offering a rectangular window (twelve squares) of about 75cm × 100cm, with a base about 85cm above the floor, topped by a half-circular structure in seven glass elements (total height of about 75cm). The roof of the *lanternon* is an octagonal pyramid with a basis located at about 50cm above the window top (approx. 310cm above the floor). From a 1m level at the center of the octagon¹, this roof induces a dead angle of about 80° around the zenith, reduced by slightly more than half by moving from window to window².

The trap closing the access of rather narrow and steep stairs has now disappeared, but the traces and notches of hinges are still visible. From collected representations (sketches, drawings, photographs), the general aspect of the tower did not change over the centuries. Fig. 1 compares a current view with a 1671 pen-and-ink sketch by Johann Jacob Arhardt (ca 1613-1674) showing the top of the tower shortly before it be covered with the turret. The structure visible then on the terrace is likely a shelter (perhaps for watchers, equipment or access stairs).

2.2. JULIUS REICHEL

Visitors of an exhibition set up in 2009 by Strasbourg's City Archives³ could see quite an interesting document: the obituary of a local mathematician,

¹A reasonable low level for positioning the eye on an astronomical instrument at that time (remember that people were shorter then).

²The usage of an instrument (quadrant, sextant, optical device) must be forgotten in those extreme positions.

³On the theme "*Les Strasbourgeois et la Mort du Moyen Âge à nos Jours*" (People from Strasbourg and Death, from the Middle Ages till Nowadays), Feb-Jun 2009.

Julius Reichelt (1637-1717)⁴. For what is of interest here, let us retain: his birth on 5 Jan 1637 in Strasbourg; his enrollment as student on 16 Oct 1644 [*Matricula Scholae Argentoratensis 1621-1721*]; his graduation as Doctor of Philosophy on 26 Apr 1660; his nomination as Professor of Mathematics in 1667⁵; his repeated deanship; and his death in Strasbourg on 19 Feb 1717 – at the age of eighty, in line with the fact that astronomers and associated scientists seem in general to enjoy a particularly long life (Heck 2008).

Shortly after his graduation, Reichelt lobbied to secure funding for a study trip in Northern Europe. He attempted to get the academic and city authorities to jointly agree on the financing: the former because they saw in Reichelt the possible next occupant of a Chair of Mathematics vacant since the death of Jakob Bartsch (1600-1633) [see *e.g.* AVCUS V44/68]; and the latter because of military information (especially on fortifications) the scholar could bring back from such a trip [see *e.g.* AVCUS 1AST426 (22 Oct 1661)]. Interestingly, only scientific motivations appear on what seems to have been a save conduct [AVCUS V46/53], possibly to facilitate his passage through the various states crossed.

This duality of approach by scientists seeking funding has nothing exceptional, even nowadays. For instance, in the 1960s-1970s, solar scientists put forward the possible ozone depletion in the upper atmosphere by the first commercial jets to obtain the funds required by the launch of scientific balloons. The upper terrestrial atmosphere and the Sun were then studied spectroscopically by the same instrumentation.

Between 1939 and 1945, under the code name *Sonnengott* (Sun God), the Third Reich air force, the *Luftwaffe*, heavily invested in solar research, as well as in establishing a chain of solar observatories. The study of solar activity was then assumed to allow reliable daily predictions for determining the best frequency bands for long-distance military radio communications. During the six years of the conflict, the German solar research grew (quoting Seiler 2007) “*from a provincial backwater to the forefront of this science*”, thanks basically to the joint effort of two men: Hans Plendl (1900-1991) and Karl-Otto Kiepenheuer (1910-1975)⁶. Examples could be multiplied.

⁴Obituary by Johann Kaspar Khun (1655-1720), sometimes spelled Kuhn. [Document referenced as AVCUS 1AST446/50 (21 Feb 1717).]

⁵Berger-Levrault (1892), echoed by several 20th-century sources, mentions 1673, which is incompatible with original documents [see *e.g.* AVCUS 1R150 (12 Aug 1667)], confirmed by an anonymous compilation of professors dated 1765 [AVCUS 1AST344/28].

⁶They supported scientists during the war, for instance by securing positions away from the front lines, but also by obtaining substantial subsidies for investigations of a definite intrinsic interest, but of a reduced utility for the *Luftwaffe* – something that did not remain without consequences when, towards the end of WWII, the Nazi authorities realized that the money spent for establishing solar observatories here and there in Europe was totally out of proportion with the actual contribution of these to the war effort.

2.3. REICHELT'S TRIP IN NORTHERN EUROPE

Reichelt's obituary [AVCUS 1AST446/50 (21 Feb 1717)] is typical of times in which he lived in that importance came from the people one had the opportunity to meet (or to listen to). Khun lists a series of high-profile scientific and military personalities whom Reichelt would have met – an impressive assemblage for a recently graduated young man taking apparently his first trip abroad. Probably one must see in such a listing a stylistic contraction of contacts established (perhaps only claimed or attempted) by Reichelt in the course of his life.

Among others are mentioned Jan Hudde (or Huddenius, 1628-1704), mathematician from Amsterdam; Johannes Hevelius, astronomer from Gdańsk (see below); Andreas Concius (1628-1682), mathematician from Königsberg; militaries and specialists in fortifications like Axel Vrop (or Urup, 1601-1671), the Hoffmann brothers⁷, as well as Hendrik Ruse (or Baron Rusenstein, 1637-1679); the cartographer Johannes Meyer (1606-1674); the physician and physicist Rasmus Bartholin (1625-1698) and the Danish astronomer Villum Lange (or Gulielmus Langius, 1624-1682, see hereafter); the librarian Adam Olearius (1601-1674), attached to the Duchy of Schleswig-Holstein-Gottorp and known for his trips to Persia.

According to the obituary, the regions visited by Reichelt were Holland, Holstein, Jutland, Denmark and Prussia. Very few documents remain from this trip, but a couple of them can be usefully exploited here. Thus Copenhagen was at the time a city surrounded by walls and its commandant kept a register of all foreigners entering the town through the four gates. Reichelt was recorded clearing Copenhagen's *toldbod* (customs) on 12 Aug 1666 together with a few other travellers coming from Gdańsk.

Copenhagen's *Rundetårn* (Round Tower), built between 1637 and 1642, belongs to the *Trinitatis* complex, designed to provide the students of the time with a church and a university library, together with an astronomical observatory. Used by the University of Copenhagen until 1861, the observatory on top of the Round Tower is the oldest European observatory still operational (nowadays only for non-professional observing). Ole Rømer (1644-1710) has been one of the prestigious users of the Round Tower, but

⁷Born in Lubań (Silesia), Gottfried Hoffmann (ca 1631-1687) studied in Leipzig and Strasbourg before entering service for the Danish Crown in 1648. He was following an elder brother, Georg who also studied in Leipzig and Strasbourg before entering the Royal Danish service in 1643, probably after some experience in fortifying several European cities. He died in 1666. In 1667/68, Reichelt attempted to get Gottfried Hoffmann as military engineer for Strasbourg, but his salary demands were too high (Westerbeek Dahl 1992 and personal comm.) [see also AVCUS 4R20 (01 May 1668)]. Strasbourg was counting its pennies as exemplified also hereafter.

his determination of the speed of light was made during his stay at Paris Observatory between 1672 and 1681.

Reichelt arrived in Copenhagen roughly a quarter of century after the completion of the Round Tower. It was then managed by Villum Lange, assisted by Rasmus Bartholin who was one of Ole Rømer's teachers. Bartholin described the double-refraction phenomenon. He is also known for his observations of a 1665 bright comet. The observatories located at the top underwent several mutations over the centuries (see *e.g.* Gykdenkerne & Barnes Darnell 1990), but all configurations benefited from the large terrace which allowed for the observation of the whole sky and the accommodation of large instruments. In Copenhagen, Reichelt stayed (at least for some time) with Simon Paulli, the King's physician, as mentioned in letters to Dean Balthasar Scheid⁸ [DK-RB Thott 498-2] in a house at 3 Endeløsstraede since destroyed by fire. Those letters also confirm Reichelt's contacts with Johannes Hevelius (1611-1687) in Gdańsk.

An excellent observer, Hevelius is seen nowadays as the founder of selenography, but he had many other contributions to the progress of astronomy. Interestingly, he *de facto* established standards for the confirmation of discoveries of celestial objects and phenomena. While he preferred non-optical instruments (sextants, etc.) for precise astrometric measurements, Hevelius built refractors for mapping the Moon as well as for other observations. The focal lengths of those described in his book *Machina Coelestis* (1673) could reach 50m and contained open tubes to reduce flexing and wind problems. His observatory, *Stellaeburgum*, rebuilt several times after destructive fires, was visited by monarchs as well as by famous astronomers, such as Edmund Halley 1656-1742). In 1661, Hevelius became a member of the Royal Society. His books include some correspondence with European astronomers, but there is no trace of Julius Reichelt ...

2.4. BACK IN STRASBOURG

As said above, Reichelt became Professor of Mathematics in Strasbourg in 1667, after his return from Northern Europe. The reality of his teaching can be taken from the following comment by Schang & Livet (1988):

“Often, failing an available specialist, the same professor was teaching several matters, even very differing ones. In the 17th century, Reichelt, the author of a treatise of arithmeric in use at the Gymnasium until 1738, gave history courses next to public courses of mathematics. [...] For the physicist, Aristotle's work was still the starting basis, at least until the 18th century. [...] Geography did not deserve special teaching: it could be combined with the mathesis to which cosmography be-

⁸Balthasar Scheid (Strasbourg, 1614-1670) has been Rector in 1655, 1660 and 1670.



Figure 1. The top of Strasbourg Hospital Gate before its covering by a lantern (1671 pen-and-ink sketch by Johann Jacob Arhardt) and nowadays (© Cabinet des Estampes, reproduced with permission, & A. Heck). The structure visible on the ancient terrace is likely a shelter. The motivations recorded in the archives for the turret lantern were the prestige of the city and the notoriety of the university.

longed. The teaching of mathematics, in spite of the emphasis given by Dasypodius⁹, remained rather elementary, at the level of the four fundamental operators of arithmetic and, as far as geometry was concerned, at the interpretation of Euclid's books. As to cosmography, as we could see from a perusal of school manuals, it was remaining faithful to Ptolemy. Copernicus was suspicious to theologians and Galileo was reeking heresy."

⁹Conrad Dasypodius (1531-1601), mathematician remembered mainly for his design of Strasbourg's famous astronomical clock.

The first part¹⁰ of Reichelt's booklet entitled *Elementa Astronomica & Geographica in usum Gymnasii Argentoratensis* (1688) deals with astronomy, but the chapter headings are indeed very conservative.

After his return from Northern Europe, Reichelt is seen through the archives as lobbying for establishing a covered observatory on top of one of Strasbourg's towers. An important document [AVCUS 4R24 (24 May 1672)] records a session of the city's *Conseil des XIII* (Small Senate) including a proposal by Reichelt for a *specula astronomica* (astronomical observatory) on one of the towers around Saint Elizabeth Gate "... for the love of studying mathematics ...". Mention is repeatedly made of the money brought in by the supposedly wealthy students who should be attracted by such a facility and of the overall prestige resulting for the university.

Various members of the Senate supported the proposal, but Stettmeister Bernhold¹¹ – who apparently burnt his fingers over budgetary excesses related to the edification of the *theatrum anatomicum* (anatomy amphitheatre) – insisted on setting a binding limit to the funding.

A fortnight later, on 10 Jun 1672, the matter went to the *Conseil des XXI*, the main City Council [AVCUS 1R155]. The reputation of the city and of the university are the only arguments appearing in the records. The need for a quick decision was emphasized. It took place at another session of the *Conseil des XXI* [AVCUS 1R155 (1 Jul 1672)]. After considering other towers (Goltersturm, Saint Elizabeth Gate, both Pulvertürme, a tower near the Saint Etienne bridge, ...), it was decided that the top of the inner tower of the Hospital Gate complex was most suitable for the intended structure.

But the estimated costs were thought to be too high and, after various arguments were exchanged, the facilities were scaled down and the *Verordnete Herren* only released 300 Guilders, instructing the scholar to come to terms with the contractors. This ditty is a familiar one, and was obviously already sung at that time. The renown of the city and the reputation of the university would be safe since they would have an observatory, but it would have no terrace. At no moment, the scientific goals of the observatory and its possible instrumental endowment have been discussed.

Later on, nothing seems to have been recorded about this observatory, except some maintenance requests in the *Bauherren* registers. A list (dated 1719?) of mathematical instruments and machines constituting Reichelt's legacy [AVCUS 1AST334/12] does not include any advanced optical instrument. A few decades later, one of Reichelt's successors, Jean-Jérémie Brackenhoffer (1723-1789), produced quite a negative review of the equipment

¹⁰57 pages (out of the 142 pages of a 13cm × 21cm manual).

¹¹Philipp Albrecht von Bernhold (or Bernold, 1631-1677) was *Stettmeister*, i.e. the city's main magistrate, on several occasions.

of the observatory including then “a 16-feet¹² focal-length astronomical refractor” virtually useless according to his description [AVCUS AA2647¹³].

In hindsight, a scientific facility can be valued from its contributions to the progress of knowledge, which can only be at its best level if the users of the facility can take advantage of an *ad hoc* instrumentation. For Strasbourg’s *specula astronomica*, the emphasis put on the prestige of the city and on the renown of the university, as well as economic considerations, resulted in a minimal observatory. This observing post did not take part to the spectacular developments that were occurring in European astronomy at the time and could not position itself for the subsequent phases, as much spectacular.

This is confirmed by the absence of the Hospital Gate in the compilations of astronomical contributions and advances published in reference works of the time. Lalande is the only one who makes a mention of it, and seems to rectify an oversight with a brief mention in his Volume 4 (1781): “*Strasbourg – M. Brackenholffer, able professor of mathematics, has there an observatory & instruments*”. For pleasant it might appear, that mention is little factual; it does not speak of any constructive observations; and it gives no details of the instrumentation (or even if it was operational).

2.5. A MISSED OPPORTUNITY

After having reviewed, in various archives, tens of documents related to Julius Reichelt, it remains difficult to figure out the exact personality of that gentleman. Although he had obviously been a gifted student, the evolution of astronomy and of the instrumentation of his time seem however to have passed well over his head. No significant advance nor inventive initiative in the scientific and military realms seems to be credited to him. He indulged himself in traditional teaching, not echoing the progress he should have been witnessing – or hearing about – in astronomy. Even if his aspirations for the lantern turret of the Hospital Gate were frustrated by economic considerations, his inspiration, as recorded, for gaining this observatory seems to have been motivated by no scientific interest.

Throughout its history and its genesis, the top of the Hospital Gate can be considered as a likely place where some astronomical observations were conducted by local scholars in charge of elementary astronomy teaching¹⁴.

¹²Inches and feet mentioned in this paper are French ones (respectively 27.07mm and 324.84mm).

¹³Document dated from 1773, today unavailable from the archives. A transcription can however be found in Lacroute (1959-60).

¹⁴There was no actual *astronomer* associated with Strasbourg universities before the creation of the current Wilhelminian Observatory at the end of the 19th century (Heck 2005a).

There is, however, no authoritative indication that the top of the Hospital Gate was the first location used for astronomical observing in the city, or that it was the only one used for that purpose at its time. Conversely, claims in popular works on possible other earlier observing places have to be disregarded as we did here. Their authors never answered our requests for documentation/substantiation of their claims.

The erection of the Hospital Gate *specula astronomica* was undoubtedly due to Julius Reichelt's efforts in successfully lobbying the local authorities after his return from Northern Europe. We have seen how the *Rundetårn* (Round Tower) in Copenhagen, completed a few years before his visit, might have inspired him. On the basis of financial considerations, the Strasbourg magistrates opted for a minimal configuration, which prevented the installation of a terrace that would have enabled the observation of the whole sky, including the zenith area where the atmospheric transparency is best. The reduced space within the turret and the parcelling of windows certainly made extensive observations of the rotating sky difficult, and the size of the instruments had necessarily to remain greatly inferior to the telescopes that Reichelt had seen – or at least heard of – while in Gdańsk. In the numerous archival documents that I perused, I found no indication that Reichelt ever advocated advanced optical instruments, remaining consistent with his traditional teaching.

While decisive observational advances were taking place in other European cities at that time, the History of astronomy does not mention anything else for Strasbourg than records of celestial phenomena visible from all (comets, etc.). My conclusion is that the top of the Hospital Gate was probably used only for rudimentary observing of bright celestial objects or phenomena relatively low on the horizon. The opportunity was then missed to establish Strasbourg as a center of observational astronomy.

3. Strasbourg “Second” Observatory

3.1. THE FRENCH *ACADÉMIE*

In the previous section, I described the genesis of an astronomical observing post, a turret lantern, located at the top of Strasbourg Hospital Gate in the second half of the 17th century, built merely for the prestige of the city and for the notoriety of the university. This facility did not leave any trace in the progress of astronomical knowledge.

After the turmoil of the French Revolution, the Napoleonic reorganization restructured the higher education nation-wide. My investigations were then directed towards another unexplored observatory said to have been erected on the roof of a building nicknamed *Académie* (formerly an orphanage) and housing the university faculties from 1828 onwards.

One of the first gold nuggets found in the local archives confirmed my own conclusions on the Hospital Gate observatory: “*The old tower, established over one of the city gates that, during three centuries, did not provide any acceptable observation, must be counted as zero in the current state of astronomy*” – an excerpt from a letter dated May 1810 [ADBR 1TP/SUP226, May 1810] by Chrétien Kramp (1760-1826), Dean of the Faculty of Sciences since July 1809.

Once more, this contradicts hasty conclusions such as those of a recent paper hinting at the 17th-18th centuries as a kind of golden age for astronomy in Strasbourg. In a manifestation of what can be called regional chauvinism, a coterie of local historians, generally amateur ones, often disregard basic principles of genuine historical research: through in-bred reciprocal quoting without returning to the original sources and documents; by misperceiving events and by failing to put them in the appropriate context of the time; and, particularly for our concern here, by a lack of *ad hoc* professional scientific expertise and competence.

Therefore, instead of wasting space as well as the readers’ time in mentioning and debunking those papers, I take the deliberate stance here of quoting only reliable works and original sources. Thus for the detailed history of the 19th-century French university, please refer to the well-documented masterpiece by Livet(1996).

3.2. MOVING THINGS

The man who started moving things for building in Strasbourg an astronomical observatory worth its name has been mentioned earlier. The biography of Chrétien Kramp¹⁵ is available from most local resources.

For what is of interest here, let us retain: his birth in Strasbourg on 10 Jul 1760; his graduation as Doctor of Medicine on 22 Dec 1785; his nomination in 1796 as Professor of Chemistry and Experimental Physics at the Central School (*École Centrale*) of Aix-la-Chapelle and in 1798 as Professor of Physics and Chemistry at the similar establishment in Cologne¹⁶. After graduating as Doctor of Sciences in 1809, Kramp came back to Strasbourg as Professor of Applied Mathematics and served also as Dean of the Faculty of Sciences until his death in 1826.

¹⁵In some biographical compilations, Kramp’s first name appears as being Chrétien-Charles. In fact, his birth record [Paroisse protestante Temple Neuf et Cathédrale, B1754-1762/1075] mentions *Christian* while his death record [ADBR D1826/947] states *Chrétien*, first name also used by Bedel (1826) in his obituary. As to the numerous archival documents I perused, Kramp appears everywhere with the title *Doyen* [Dean] or *Prof.* Himself signs with his only surname and no initials. Note the occasional spelling *Krampp* as in Berger-Levrault (1892).

¹⁶Respectively Aachen and Köln, then within the Napoleonic empire.

With his local authority and good connections in Paris, Kramp lobbied¹⁷ for a really operating observatory on top of the building that was going to accommodate the university faculties, equipped with a terrace, an opening roof and good instruments, the jewel of which was ultimately going to be a 132mm meridian refractor with a Cauchoix objective doublet.

His letter mentioned above on the zero value of the Hospital Gate tower as an astronomical observatory was addressed to Jean-Baptiste Joseph Delambre (1749-1822) who, among other charges, was Treasurer of the Imperial University in Paris since 1808. It goes on in the same vein about the available instruments: “*The same must be said of the few old and defective instruments located there; a very mediocre 8" telescope is all that would be worth retaining.*”

In November 1810, Kramp addresses a memoir to the Mayor of Strasbourg [ADBR 1TP/SUP226, 4 Nov 1810] criticizing the old tower and stressing the need for something better. In an undated document, likely from 1811 [ADBR 1TP/GEN108], things get more precise: “*The new observatory would be on the roof of the [future] building housing the faculties and would be made of a cylinder, 12' in diameter and 5 to 6' high, covered with a mobile dome.*”

But Kramp is not waiting for the observatory to conduct observations. He goes with his students on the city walls after having secured an ad hoc authorization from the Military Commander for those nightly activities, as well as the blessing of the University Rector recommending caution and appropriate supervision to prevent abuses from the supposedly turbulent fellows [ADBR 1TP/SUP89, 25 May 1811].

3.3. THE ACADÉMIE BUILDING

In the course of the following years, Kramp continues pressurizing successive authorities¹⁸, tirelessly explaining the need for a good observatory in

¹⁷The above excerpt from the May 1810 letter speaks of “three centuries” while, if the Hospital Gate Observatory has been built some time after 1672 (cf. first section of this paper), it was not yet 150 years old when Kramp wrote his letter. Was the Hospital Tower used as an observatory before the construction of its *lanternon*? Nothing however proves it in spite of unwise (undocumented, non-referenced) declarations of some modern popularizers. According to Kramp himself, there was no trace of such activities. I rather believe that, in good lobbyist, Kramp put some emphasis in his argumentation and that the three centuries have to seen as the one when the *lanternon* was built (17th), the intermediary 18th and the 19th century when the letter was written.

¹⁸Napoleon’s rule ended in 1814 and was followed by the so-called *Restauration* (Louis XVIII from 1814 to 1824 and Charles X from 1824 to 1830) with the exception of the Hundred Days (*Cent Jours*) when Napoleon re-took power (20 Mar – 22 Jun 1815). The *Monarchie de Juillet* (Louis-Philippe) lasted from 1830 to 1848 and was followed by the Second Republic from 1848 to 1852 and the Second Empire (Napoleon III) from 1852 to 1870, terminated by the Franco-Prussian War at the outcome of which Strasbourg

Strasbourg equipped with appropriate instrumentation. He acquires small instruments (such as a 6 " telescope) and accessories (globes, etc.). Things are slowly moving in the minds of his interlocutors as testified by various 1819 letters from the Rector directed to Kramp (such as "*we should now investigate without delay how to get a proper observatory*" [ADBR 1TP/SUP99, 26 Aug 1819]) and to military authorities investigating the suitability of one of the towers used as a prison [ADBR 1TP/SUP89, 15 Sep 1819] or the possibility to deviate traffic (inducing vibrations) from under the Hospital Gate and to reshape its upper stories [22 Dec 1819].

Three years later, the picture frame is set: the municipality agrees to host the faculties in the building of the *École du Travail*, an old orphanage¹⁹ belonging to the city. Finally in 1824, there is a green light from all sides for putting an observatory on that building and the University Rector formally requests Kramp to take care of the project and to submit plans as soon as they would be approved by his Faculty of Sciences.

Blueprints [AVCUS 1A119-120] from Architect Jean-Nicolas Villot (1782-1857) show the *Académie* façade with the observatory sticking out of the back as well as a floor layout of the main building and of the dependences detailing the intended distribution of the various laboratories, lecture rooms and other quarters.

3.4. CARRYING THE TORCH FURTHER

As mentioned in Sitzmann (1909), the multiplication of Kramp's activities undermined his health and diminished his intellectual abilities towards the end of his life. His name disappears indeed from the archives in the early 1820s. But support continues to be provided to the observatory project, including from unlikely characters. For instance in 1825, the Rector was lobbied by a former military surgeon, François Bonaventure Meunier²⁰ (1779-1838), now Professor of Hygiene and Medical Physics at the Faculty of Medicine, who fancied the observing facility for medical applications of meteorology²¹, as well as for what sounds to be playing with camera obscura

became German.

¹⁹For the history of this establishment, see *e.g.* Hitter (1993), Jordan (2008) and Sablayrolles (1975-76).

²⁰Sometimes spelled Meulnier. He is also known for having advocated a lightning rod on the cathedral. There is a discrepancy about his birth date: Berger-Levrault (1892) mentions 8 Jun 1779, followed by Livet (1996), while Wieger (1885) and Mantz & Héran (1997) see him ten years older: 1769. The latter ones appear to be correct. Meunier was born in Layer (Jouvençon) in the Saône-et-Loire *département* and not in Laye (Berger-Levrault 1892), nor in Layes (Wieger 1885), these latter indications leading to some confusion with the current commune of Layes-sur-le-Doubs in the same *département*.

²¹The spreading of diseases was not yet fully understood at the time. Meunier was mixing medicine with meteorology, astronomy, etc. It is interesting to note that Louis

and electricity [ADBR 1TP/GEN107, 2 Jan 1825].

Kramp died (13 May 1826) before seeing his baby operational. He was replaced by a chemist as Dean and by Ambroise Nicolas Sorlin (1773-1849) as Professor of Applied Mathematics in charge of astronomy. Sorlin is harshly judged by historians of the French university (Livet 1996), basing their opinion on a comment by Rector Cottard: “*Sorlin’s retirement [in 1847] was a blessing for science.*” I cannot agree with such a blunt view: through the archives, Sorlin is seen as quite active in his first years, getting the meridian refractor operational, filing requests, complaining about deterioration of the observatory and trying to improve the overall situation.

Born in Paris on 1 Feb 1773, graduated Doctor in Sciences in 1822, Sorlin took over the chair of applied mathematics in Strasbourg on 27 Nov 1826. The first appearance of his name in the local archives is in the signature of a letter to the Rector [ADBR 1TP/GEN107 (11 Jun 1827)], reporting the severe damage by a strong storm to the observatory and to the laboratory underneath where astronomical instruments were stored.

The same letter includes the first mention of a meridian instrument. It is quite likely that in Paris Sorlin met or at least heard of his almost exact contemporary, the optician Robert Aglaé Cauchoix (1776-1845) whose name in turn appears in an 1828 inventory listing “*an achromatic objective of five inches in diameter from Mr Cauchoix, made of two glasses and intended for a meridian refractor*” [ADBR 1TP/SUP252].

Several other important pieces from Sorlin’s times are worth mentioning here:

- A series of blueprints dated 1828 [AVCUS 843W94], also from Architect Villot, provide very interesting details: the observatory is an irregular octagon with an inside width between 540 and 570cm, and an inside height of 325cm; it is covered with zinc; the light enters through 18 casement windows, one serving as a door enabling access to a terrace going around the observatory; the elevation is sufficient for preventing any chimney or close building to mask the horizon; there is an opening in the roof along the meridian which is closed by four planks covered with zinc and fixed with hinges and a hook. Compare to the Hospital Gate Observatory, the improvements are significant: more space inside, existence of a terrace, roof opening and allowing to observe the zenithal area where the atmospheric transparency is best. Fig. 2 shows the observatory as represented in the 1836 plan-relief of Strasbourg.
- With the aim of identifying improvements to be brought to the observatory, Sorlin successfully managed to get an expertise from the *Bureau des Longitudes* in Paris. This remains as a most interesting report [ADBR

Pasteur (1822-1895), pioneer of microbiology, taught (chemistry) later on in that very *Académie* building (1849-1854).



Figure 2. Close view of the main U-shaped *Académie* building from the 1836 plan-relief of Strasbourg. The observatory is visible over the cylindrical tower protruding from the back side. The result of an insistent lobbying including an audit by an outside body, it has been the first attempt to have in Strasbourg a real observatory equipped with genuine instrumentation. (© *Inventaire du Patrimoine*, reproduced with permission)

1TP/SUP9, 31 Mar 1829], signed by the then Bureau Secretary François Arago (1786-1853). Here are a few excerpts:

“From the instruments used for measuring angles currently at Strasbourg Observatory, there is none suitable for astronomical observations. [...]

“The observatory is rather well equipped in terms of refractors: ordinary refractor of 2' 1/2, a polyalde refractor from Mr Cauchoix, an excellent refractor of 4' from Munich and finally an objective of 5" made by Mr Cauchoix, still unmounted. Mr Sorlin proposes to adapt it to a meridian refractor to be built and to be established on pillars. [...]

“We do not think that an observatory located so high and resting over such a broad arch would be of great stability.

“Conclusions. From the examination of premises so little in favor of an observatory from which we received the plans, we think that the only instruments that could be installed there with some benefit would be: a meridian refractor, an astronomical pendulum and a portable refractor suitable to observe the solar eclipses, the stellar occultations, as well as the immersions and emersions of the satellites of Jupiter. Given the impossibility to estab-

lish a parallactic machine in such a confined space, that portable refractor should be equipped with a circular micrometer enabling the local observers to follow comets with some success."

- Letters [ADBR 1TP/GEN107, 28-29 Jul 1829] between the Mayor, the Rector and Lieutenant-Colonel Epailly shed some light on the origin of the pillars used for supporting the meridian refractor: the military commander suggests to recover two pillars from Bastion IX located just outside the city walls (roughly West of the city) where they had supported another instrument used for establishing a map of France²².

3.5. WINDING DOWN

As he fell ill later on, Sorlin asked for replacement and early retirement, generating an abundant correspondence which might have triggered irritation from administrative authorities and the harsh appreciation quoted above. Pierre Joseph Étienne Finck (Lauterbourg, 1797 – Strasbourg, 1870) stood in for Sorlin in 1842 and fully took over in 1847. Sorlin died in Batignolles [AdP V3E/D1375] near Paris on 25 Dec 1849. Apparently more oriented towards mathematics, Finck did not leave any significant trace linked to the observatory. He was intellectually diminished in his later career.

In parallel to all this, the archives reveal continual attempts to move the university elsewhere: professors unhappy of the *Académie* location, just outside the city walls, but too far away for them; city authorities wanting to recover the building for other purposes; and the military (especially the cavalry) having an eye on it because of the vast nearby training grounds. Thus a permanent cloud of uncertainty hovered over the *Académie* observatory.

The *coup de grâce* came from Xavier-Dagobert Bach (Soultz, 1813 – Marlenheim, 1885²³), a mathematician taking over as Dean of the Faculty of Sciences in 1866. In a document on a possible transfer [ADBR 1TP/GEN108 (26 Nov 1867)], he wrote: *"I am not requesting a new observatory, which would be quite expensive, but a terrace where portable instruments could be installed when some interesting celestial phenomenon could be observed"* – in other terms, back to the situation a century earlier when observational astronomy in Strasbourg was treated by scholars on a, say, amateurish level.

Bach's unfavorable disposition towards practical astronomy was implicitly confirmed at the outcome of the Franco-Prussian War when Strasbourg

²²See also Yvon-Villarceau (1866), p. 321.

²³Most biographical compilations provide erroneous elements from that scholar: Bach is born in Soultz in the Haut-Rhin *département* (and not in Soultz-sous-Forêts in the Bas-Rhin *département*) on 16 Jun 1813 (and not on 13 or 15 Jun) and his death record in Marlenheim is dated 9 Oct 1885 (and not 1 Oct).

became German and he wished to be reassigned to a Faculty inside France “with a full teaching of mathematics ... as it would be excessively difficult to take charge of a chair of applied mathematics” (Livet 1996).

3.6. INSTRUMENTATION AT THE *ACADÉMIE*

A few words on the available instrumentation are in order and we can follow its evolution through several inventories. Thus all what Kramp is listing in August 1818 [ADBR 1TP/SUP252] are two globes (celestial and terrestrial, 1' in diameter) and a catadioptric telescope (6" in diameter, 5' of “focus”). Specific instruments are regularly petitioned through the budgets presented by the Faculty of Sciences, but there is no certain indication whether or when these were acquired.

Reliable documents are available a few years later, when Sorlin prepares his audit by the *Bureau des Longitudes*. An inventory dated 1828 [ADBR 1TP /SUP252] includes the globes just mentioned for Year 1811, an achromatic telescope (3') for Year 1827 and Cauchoix's 5" achromatic objective doublet for Year 1828. Another report [ADBR 1TP/SUP9 (10 Dec 1828)] includes also an achromatic refractor (2' 1/2, mediocre objective), a polyalde refractor from Cauchoix (good) and another refractor from Munich (4', excellent). It precises the cost of Cauchoix's doublet (2500 Francs) and insists on the urgent need for a mounting and pillars to make the meridian operational.

The notes accompanying the budget prepared by the Faculty of Sciences for 1830 [ADBR 1TP/SUP252 (19 May 1829)] bring also their share of information: 2500 and 4500 Francs have been granted respectively for the meridian objective and for the instrument mounting “that will be the most beautiful of France after that of the grand royal observatory in Paris. That passage instrument must be delivered in Strasbourg on next 15 December, and the box must be opened in the presence of the Faculty who will examine the instrument conditions, all damage remaining under the responsibility and charge of Artist Cauchoix to whom the mounting had been entrusted.” Follows an estimate of the cost for the masonry and counterweight mechanism for the final installation, as well as the urgent need in books and journal collections “to be at the level of Paris and at least of Berlin, given the frequent visits by German erudites²⁴.”

A last piece worth mentioning here is an inventory marked 1843 [ADBR 1TP/SUP261] including new elements such as a refractor from Franckhofer

²⁴No detail, however, on such visits emerged so far from the archives. Was it then sheer bluff from the Faculty?

[sic²⁵], a Gregorian telescope, a Galilean refractor, a micrometric refractor from Rochon²⁶ and a “vitro-cristalline” refractor from Cauchois [sic].

3.7. ANOTHER MISSED OPPORTUNITY

Strasbourg’s so-called second observatory has been the first real attempt to set up in the city an actual observatory equipped with genuine instrumentation with the purpose to carry out serious research.

It involved all steps of modern procedures such as a long and persuasive lobbying fighting systemic inertia from all parties involved, an appropriate site research, an audit from outsiders, etc. The succession of political regimes in France²⁷ slowed down the whole process. The repeated attempts to move the university (and its observatory) elsewhere, as well as the lack of interest in observational astronomy from scholars in the second half of the 19th century prevented effective productivity of the facility. To my knowledge, there is no record in the astronomical literature of observations carried out in the *Académie* facility.

After the Franco-Prussian War (1870-1871), the new German university used the building for a decade. Instrumentation was recovered, including the meridian instrument equipped with the Cauchoix objective doublet.

In the course of my investigations, I had the opportunity to visit the *Académie* building (today a professional school). The layout is still the 19th-century one, including markings of the time (such as “*Rectorat*”). The central attic where the observatory was based, or rather its underneath laboratory, is today a documentation centre for the students and the necessitated reinforcement of the floor is hiding any possibly remaining trace. In a backstage room, I noticed however quite old stairs that might have been those leading to the observatory floor. The observatory itself has totally disappeared. In lieu of it today is a small pyramidal roof.

4. The Wilhelminian Observatory

At the outcome of the Franco-Prussian war of 1870-1871, France lost Alsace and Moselle. As often in the course of History, the new German authorities decided to make a showcase of the newly acquired region and in particular of its capital Strasbourg. New spacious and structured quarters were built, still called today the Wilhelminian Quarters from the name of the new masters, the Emperors Wilhelm I (1797-1888) and Wilhelm II (1859-1941) who ruled until the end of World War I.

²⁵In fact, Joseph von Fraunhofer (1787-1826). The refractor from Munich mentioned earlier is certainly the same instrument.

²⁶Abbot Alexis-Marie de Rochon (1741-1817).

²⁷See Footnote 18.



Figure 3. View around 1880 of the *Kaiserliche Universitäts-Sternwarte Straßburg*, the Wilhelminian observatory, showing (left) the dome of the Large Refractor, (center) the two smaller domes on a building housing also two meridian rooms, and (right) the Director's residence. The covered corridors linking the buildings are also visible. A few paths and young trees of the Botanic Garden are visible in the left foreground. The traces left by cartwheels on the right mark the future *Universitätsstraße*. The Imperial University including this observatory was the result of a deliberate political will from Berlin to have in Strasbourg a strong educational outpost. (Courtesy Strasbourg Obs.)

The new city expansion included a modern university campus with an astronomical observatory. The construction of the latter took place between 1877 and 1880, with an inauguration in September 1881 celebrated with a General Assembly of the *Astronomische Gesellschaft*. August Winnecke (Hildesheim, 1835 – Bonn, 1897), the first Director of that observatory, was also Secretary of the German professional society.

From the start, the observatory consisted of several elements connected by covered corridors (Fig. 3). The most emblematic building, the Big Dome, was positioned at the end of a double line of university institutes. It was completed by a residential building for the Director, including offices, and an observational unit with two smaller domes and two meridian rooms.

In the first volume of the *Annalen der Kaiserlichen Universitäts-Sternwarte in Strassburg* (1896), Ernst Becker (Emmerich am Rhein, 1843 – Freiburg, 1912), the second German Director, described the buildings and the instruments they were housing. The initial instrumentation included the 132mm Cauchoix passage instrument recovered from the French *Académie* observatory and put in the West meridian room. A 160mm meridian instrument was purchased from Repsold and assigned in 1880 to the East meridian room. A 76mm heliometer by Utzschneider & Fraunhofer was ac-

quired in 1877 from the Ducal Observatory in Gotha. In 1874, it was part of an expedition to the Kerguelen Islands for the transit of Venus with a team from Gotha. For the following transit in 1882, it went to Bahía Blanca (Argentina) with a team from Strasbourg.

The Large Refractor, a 487mm telescope, was built in 1877 by Merz (Munich) with a mounting manufactured by Repsold in 1880. The instrument was then the largest in Germany. The Northern smaller dome was equipped with a 136mm altazimuthal refractor built by Merz & Repsold in 1879. As to the Southern dome, it was hosting a 162mm refracting telescope manufactured in 1876 by Reinfelder & Hertel (Munich).

The German *Inventar* of the observatory lists numerous other instruments among which a 162mm comet seeker built by Merz in 1876 with an altazimuthal mounting set on a mobile chair. Other comet seekers, small refractors and various instruments were part of the sizable equipment in those initial times. As to the astrophysical instrumentation (and to the exception of an astrophotometer from Gotha Observatory), it is essentially under Julius Bauschinger (Fürth, 1860 – Leipzig, 1934), the third German Director, that the observatory acquired spectroscopic, photographic and photometric devices.

For the history of the Wilhelminian observatory and of its subsequent evolution (French in 1919, German during World War II, then French again), interested readers are invited to refer to an edited volume (Heck 2005a) as well as to the bibliographical pointers it offers.

As explained in various papers (see e.g. Heck & Witt 2012), the underlying motivations for the new German university in Strasbourg were essentially political, under direct instructions from the *Reichskanzler* Otto Eduard Leopold von Bismarck (1815-1898), as recorded in the proceedings of the *Reichstag* session of 24 May 1871, formalized by a law passed on 20 Apr 1872 (see e.g. Hausmann 1897 and Jonas *et al.* 1995). From a report on the re-organization of Strasbourg university dated 3 Oct 1871, the reasons for including an astronomical observatory are of the same political vein:

“Even if the necessity of an observatory at all universities has to be questioned, one must take into consideration that, for Strasbourg, there is a strong political interest to create not only a military, but also an educational outpost as strong as possible.”

(Bericht die Reorganisation der Universität in Strassburg betreffend [ADBR 12AL8])

The motivations behind the choice of Winnecke as the first Director are not fully detailed, but he was definitely a second choice as the first person approached was Johann Karl Friedrich Zöllner (1834-1882) who declined the offer (see e.g. Duerbeck 2005 and Wolfschmidt 2005). Winnecke’s initial plans were to put the observatory North of the city, in Schiltigheim, away

from the mist and frequent fog in the proximity of the Rhine and Ill rivers (fog also mentioned by Winterhalter 1891), but he was convinced to stay near the other institutes on the university campus (Hausmann 1897, Jonas *et al.* 1995). Attempts to reduce the temperature effects were made by using “gas flames” in Winter and, in Summer, water running over the large dome (covered by zinc) from its top. It is doubtful however that such a spectacular procedure was routinely used (Heck 2009).

5. Final Remarks

More examples of lobbying related to Strasbourg Observatory could certainly be brought forward. For instance, in an earlier paper (Heck 2005b), I described the genesis of the data center installed at Strasbourg Observatory in 1972. Initially called *Centre de Données Stellaires* (Stellar Data Center), it was renamed *Centre de Données astronomiques de Strasbourg* (Strasbourg astronomical Data Center) in order to retain the acronym CDS when its scope of activities were broadened to non-stellar data. In a subsequent paper (Heck 2006), I described its progressive penetration on the world scene, mainly in the 1980s, to which I was privileged to actively participate. Please refer to those papers for details, illustrations and references.

CDS was established through excellent relationships between European astronomers pushing for such a facility in the late 1960s, within an international context where the creation of such centers was felt increasingly urgent, motivating even the creation of an *ad hoc* working group at the 1970 General Assembly of the International Astronomical Union in Brighton. The move concurred also with the desire to reinforce Strasbourg Observatory within a policy of regionalization in France.

The second CDS Director, Carlos Jäschek (Buenos Aires, 1926 – Salamanca, 1995), multilingual and with an extensive international network, multiplied working relationships and international agreements, particularly with so-called Third-World and Eastern European countries when the Cold War was still an acute reality. With my participation in 1977 to the foundation of the European observatory for the International Ultraviolet Explorer (IUE) at Vilspa (Spain), CDS data became a reference²⁸, even more so when I was put in charge of the scientific operations. Accurate positions of the observed objects were critical for the spacecraft pointing as its safety was paramount. Later on, Vilspa became the first international station (Jan 1981) connected to CDS’ Simbad database when it became operational.

²⁸With Jean Jung (1944 –), first CDS Director, as PhD supervisor when he was still at Paris Observatory, I had been de facto the first scientific user of CDS data, even before the center’s official existence.

Conversely, when I joined Strasbourg Observatory in 1983, I could use all my contacts in the space agencies, and particularly at NASA, to “sell” Simbad and the related CDS services worldwide. Lobbying was then most frequently done at personal expenses, by Jaschek or myself, leaving guests with the best souvenirs of local gastronomy.

If one of the basic lobbying principles is that only good products or causes can be “sold” sensibly and sustainably – beyond developing and maintaining excellent contacts, fostering confidence from people, acting persistently, helping luck with gentle touches of bluff, developing flexibility to foreign cultures, exercising (away from both arrogance and toadyism) top-level respectful diplomacy helped by well-trained acute intuitions – in all this, trust and credibility are certainly essential and complementary virtues.

One of my most cherished recollections is a NASA meeting convened (Aug 1987) on the future of the space data collected by the agency. What seemed at first to be one of those standard meetings where to present CDS and SIMBAD turned out quickly of unusual importance with the presence of major project leaders and NASA’s Director of Astrophysics. With a talk scheduled in the late afternoon, it became a real fight with jetlag to re-tailor in real time the presentation of SIMBAD emphasizing the differences with the individual papers on space logs and catalogs filling in the agenda, insisting on the integrated-database character, and clearing any possible suspicion of chauvinism by praising, as a Belgian, that French-based jewel.

The next morning, with typical American efficiency, a NASA Headquarters’ official shook hands in an elevator of the hotel and, between the ground and third floors, declared they were going to support a link between CDS and the Astrophysics Data System (ADS) being set up, as well as to likely complete the arrangements by installing an adequate machine²⁹ at Strasbourg Observatory and even possibly putting at our disposal a couple of yearly grants. This was an open door to CDS/SIMBAD’s spreading in North America and beyond. From then on indeed again, the critical political decision having been acquired, the story became only technical.

Lobbying can be best appreciated in the socio-historical context where it has been exercised. If human nature remained much the same over centuries (at least in terms of astuteness, to say it nicely), the procedures employed have evolved with time. The cases described in this paper show how the dramatic changes resulting from the French Revolution or the nationalist movements in 19th-century Germany had a decisive influence, not to forget the skinking of the planet in the last decades of the 20th century due to spectacularly improved communication means and travelling capabilities.

²⁹French institutions were not free then to purchase the computers they wanted.

Finally, as to the motivations behind lobbying, they can be, as illustrated above, of a very differing nature. Sometimes, they can be barely rational³⁰ or even totally others than those expressed in official reports³¹.

Acknowledgements

I wish to thank here the personnel of the various archive centers visited. My special gratitude goes to Jean-Pierre Beck, Élisabeth Clémentz, Clara Del Piano, Hilmar Duerbeck, Christine Esch, Julien Fréchet, Monique Fuchs, Marcel Haller, Benoît Jordan, Françoise Launay, Claude Lorentz, Philippe Lorentz, Jean Manfroid, Bernard Metz, Clémence Meyer, Jean-Philippe Meyer, Erling Poulsen, Jérôme Ruch, Séverine Schmutz, François Schwicker, Henrik Stissing Jensen, Philippe Vonflie, Bjørn Westerbeek Dahl and Volker Witt, as well as to Jacky Eck and Mme Sivoravong for their kind assistance in visiting respectively the *lanternon* of the Hospital Gate and the *Lycée Professionnel Jean Frédéric Oberlin* accommodated today in the *Académie* building.

References

1. Becker, E. 1896, *Ann. Kaiserl. Univ.-Sternw. Strassburg*, 1. Serie, **1**, I-XVII.
2. Bedel, J. 1826, Notice sur la vie et les ouvrages de M. Kramp, *J. Soc. Sc. Agriculture et Arts Dépt. Bas-Rhin* **3**, 252-259.
3. Berger-Levrault, O. 1892, *Annales des professeurs des académies et universités alsaciennes 1523-1871*, Éd. Berger-Levrault, Nancy, 308 pp. + tables.
4. Duerbeck, H. 2005, The People Behind the Documents, in *The Multinational History of Strasbourg Astronomical Observatory*, Ed. A. Heck, Springer, Dordrecht, 89-122.
5. Gyldenkerne, K. & Barner Darnell, P. (Eds.) 1990, *Dansk Astronomi Gennem Firehundrede År. Bind 1*, Rhodos, København, 132 pp. (ISBN 87-7245-281-1)
6. Hausmann, S. 1897, *Die Kaiser-Wilhelms-Universität Strassburg – Ihre Entwicklung und ihre Bauten*, Verlag W. Heinrich, Strassburg i. Els., 224 pp.
7. Heck, A. (Ed.) 2005a, *The Multinational History of Strasbourg Astronomical Observatory*, Springer, Dordrecht, 310 pp. (ISBN 1-4020-3643-4)
8. Heck, A. 2005b, Vistas into the CDS Genesis, in *The Multinational History of Strasbourg Astronomical Observatory*, Ed. A. Heck, Springer, Dordrecht, 191-209.
9. Heck, A. 2006, The Progressive World Penetration of the Strasbourg Astronomical Data Center (1970-1990), in *Organizations and Strategies for Astronomy 7 (OSA 7)*, Ed. A. Heck, Springer, Dordrecht, 315-354.
10. Heck, A. 2008, Compiling Biographical Encyclopediae of Astronomers, *Observatory* **128**, 495-498.
11. Heck, A. 2009, The Strasbourg Large Refractor and Dome: Significant Improvements and Failed Attempts, *Bull. Amer. Astron. Soc.* **41**, 186-187.

³⁰See for instance the chapter by Jack Meadows in this volume citing “*It can be very depressing to live in a place where the sun seldom shines*” as an objection to a British site proposed for an accelerator.

³¹The location selected in the 1960s for a meridian instrument in the French Pyrenees proved to be inadequate, but it was in fact near a thermal city appreciated by the wife of one of the key decision-makers (Rousseau & Heck 2009).

12. Heck, A. & Witt, V. 2012, Eine Sternwarte als Spielball der Politik – Die deutsch-französische Vergangenheit des Straßburger Observatoriums, *Sterne und Weltraum* **2012/2**, 82-88.
13. Hevelius, J. 1673, *Machina Coelestis, Pars Prior. Organographiam, sive Instrumentorum Astronomicorum Omnium*, Simon Reiniger, Gdańsk, 472 pp.
14. Hitter, J.M. 1993, L'école du travail à Strasbourg à l'aube du 19^e siècle: Crise économique et traitement social de la pauvreté, Conf. AG Mission locale pour l'emploi des jeunes, Strasbourg, 7 mai 1993, 19 pp.
15. Jonas, S., Gérard, A., Denis, M.N. & Weidmann, F. 1995, Strasbourg – capitale du Reichsland et sa nouvelle université (1871-1918), Éd. Oberlin, Strasbourg, 282 pp. (ISBN 2-85369-146-2)
16. Jordan, B. 2008, Le bon goût à Strasbourg en 1771, *Annuaire Assoc. Amis du Vieux Strasbourg* **33**, 127-133.
17. Lacroute, P. 1959-60, L'observatoire de Strasbourg hier et aujourd'hui, *Bull. Soc. Acad. Bas-Rhin* **81-83**, 32-42.
18. Lalande, J. de 1771-1781, *Astronomie. Seconde édition revue et augmentée. Tomes I-IV*, Vve. Desaint, Paris, 856 + 830 + 840 + 788 pp.
19. Livet, G. 1996, L'Université de Strasbourg de la Révolution Française à la Guerre de 1870, Presses Univ. Strasbourg, 528 pp. (ISBN 2-86820-657-3)
20. Mantz, J.M. & Héran, J. 1997, Histoire de la médecine à Strasbourg, La Nuée Bleue, Strasbourg, 800 pp. (ISBN 2-7165-0219-6)
21. Reichelt, J. 1688, *Elementa Astronomica & Geographica in usum Gynmasii Argentoratensis*, Argentorati, 142 pp.
22. Rousseau, J.M. & Heck, A. 2009, La villégiature pyrénéenne de la lunette méridienne de Liège, *Le Ciel* **71**, 326-330.
23. Sablayrolles, E. 1975-1976, L'enfance abandonnée à Strasbourg au XVIII^e siècle et la fondation de la maison des enfants trouvés, *Bull. Soc. Acad. Bas-Rhin* **95-96**, 1-117.
24. Schang, P. & Livet, P. (Éds.) 1988, Histoire du gymnase Jean Sturm. Berceau de l'Université de Strasbourg 1538-1988, Éd. Oberlin, Strasbourg, 480 pp. (ISBN 2-85369-069-5)
25. Seiler, M.P. 2007, Kommandosache "Sonnengott" – Geschichte der deutschen Sonnenforschung im Dritten Reich und unter alliierter Besatzung, *Acta Historica Astronomiae* **31**, Verlag Harri Deutsch, Frankfurt am Main, 246 pp. (ISBN 978-3-8171-1797-0).
26. Sitzmann, E. 1909, Dictionnaire de biographie des hommes célèbres d'Alsace depuis les temps reculés jusqu'à nos jours, Sutter & Cie, Rixheim, 2 vol., 874 + 1108 pp.
27. Waton, M.D., Werlé, M. & Munier, Cl. 2000, L'environnement défensif singulier de la place de l'Hôpital à Strasbourg, *Cahiers Alsaciens* **43**, 67-98.
28. Westerbeeck Dahl, B. 1992, The Military Engineer Gottfried Hoffman and his Works in Denmark, 1648-1687, *Fortress* **13**, 3-12.
29. Wieger, F. 1885, Geschichte der Medicin und ihrer Lehranstalten in Strassburg vom Jahre 1497 bis zum Jahre 1872, Verlag K.J. Trübner, Strassburg, 173 pp.
30. Winterhalter, A.G. 1891, The International Astrophotographic Congress and a Visit to Certain European Observatories and Other Institutions, US Naval Obs., Washington.
31. Wolfschmidt, G. 2005, Strasbourg Observatory in German Times, in *The Multinational History of Strasbourg Astronomical Observatory*, Ed. A. Heck, Springer, Dordrecht, 63-87.
32. Yvon-Villarceau, A.J. 1864, Observations faites au cercle méridien n° 1 de Rigaud pour la détermination des longitudes et des latitudes terrestres. II. Observations des temps de passages faites à Strasbourg, *Ann. Obs. Paris* **19**, E7-E25.