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Strasbourg's "Academy" Observatory

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The observing post located on the roof of Strasbourg's 19$^{\text{th}}$-century "Academy" is generally considered as the second astronomical observatory of the city: a transitional facility between the (unproductive) turret lantern at the top of the Hospital Gate and the German (Wilhelminian) Observatory. The current paper reviews recent findings from archives (blueprints, inventories, correspondence, decrees and other documents) shedding some light on this observatory of which virtually nothing was known to this day. While being, thanks to Chrétien Kramp (1760–1826), an effective attempt to establish an actual observatory equipped with genuine instrumentation, 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. A meridian instrument with a Cauchoix objective doublet was however recovered by the German observatory and is still existing.

Der Beobachtungsstand auf dem Dach des aus dem 19. Jahrhundert stammenden Straßburger Akademiegebäudes wird üblicherweise als das zweite astronomische Observatorium der Stadt angesehen: eine Übergangseinrichtung zwischen der (unproduktiven) Turmlaterne auf der Spitze des Hospitaltores und der Deutschen (Wilhelminischen) Sternwarte. Der folgende Text gibt einen Überblick über kürzliche Archivfunde (Bauzeichnungen, Inventarverzeichnisse, Korrespondenzen, Beschlüsse und andere Dokumente), die etwas Licht auf dieses Observatorium werfen, über das bislang praktisch nichts bekannt war. Aufgrund der Aktivität von Chrétien Kramp (1760–1826) war es ein effektiver Versuch, ein mit gediegener Instrumentierung ausgestattetes Observatorium einzurichten, doch die Aufeinanderfolge verschiedener politischer Regimes in Frankreich und die beständige Absicht, die Universität nach anderenorts zu verlagern, in Verbindung mit dem zögerlichen Verhalten der Nachfolger torpedierte jeglichen bedeutsamen wissenschaftlichen Gebrauch der Einrichtung. Ein Meridiankreis mit einem Cauchoix-Dublett-Objektiv wurde in die deutsche Sternwarte überführt und existiert noch.

Fig. 1. The faculties of the 19th-century French university were housed after 1828 in this building nicknamed the *Académie* (formerly an orphanage). The German university also used this building during roughly a decade (1871–1881), until the completion of the new Wilhelminian university. The back of the building displayed in the lower picture shows the cylindrical structure on which the observatory rested. (upper picture: © *Cabinet des Estampes*, reproduced with permission; lower picture: © A. Heck)

1 Introduction

In an earlier paper (Heck 2011), we 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 re-organization of the country restructured the higher education nation-wide. Our investigations were then directed towards another observatory said to have been erected on the roof of a building nicknamed *Académie* (formerly an orphanage – Fig. 1) and housing the university faculties from 1828 onwards.

One of the first gold nuggets found in the local archives confirmed our 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 by Chrétien Kramp (1760–1826), Dean of the Faculty of Sciences since July 1809.

This contradicts once more hasty conclusions such as those of a recent paper hinting at the 17^{th}–18^{th} 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, by a lack of *ad hoc* professional scientific expertise and competence.

Therefore, instead of wasting space as well as our and the readers' time in mentioning and debunking those papers, we take the deliberate stance here of quoting only reliable works and original sources. Thus for the detailed history of the 19^{th}-century French university, refer to the extremely well documented masterpiece by Livet (1996). The documents from archive vaults mentioned in the current paper are referenced as ADBR (for the *Archives Départementales du Bas-Rhin*) and AVCUS (for the *Archives de la Ville et de la Communauté Urbaine de Strasbourg*), followed by the folder number and/or corresponding date.

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 Kramp[1] is available from most local resources. For what is of interest here, let us retain: his birth in Strasbourg on 10 July 1760; his graduation as Doctor of Medicine on 22 December 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 Cologne.[2] 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.

With his local authority and good connections in Paris, Kramp lobbied 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.

[1] Sometimes also spelled Krampp.

[2] Respectively Aachen and Köln, then within the Napoleonic empire.

His letter mentioned above [ADBR 1TP/SUP226, May 1810] 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 The Academy Building

In the course of the following years, Kramp continues pressurizing successive authorities,[3] tirelessly explaining the need for a good observatory in 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 storeys [22 Dec 1819].

[3] Napoleon'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 March – 22 June 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 became German.

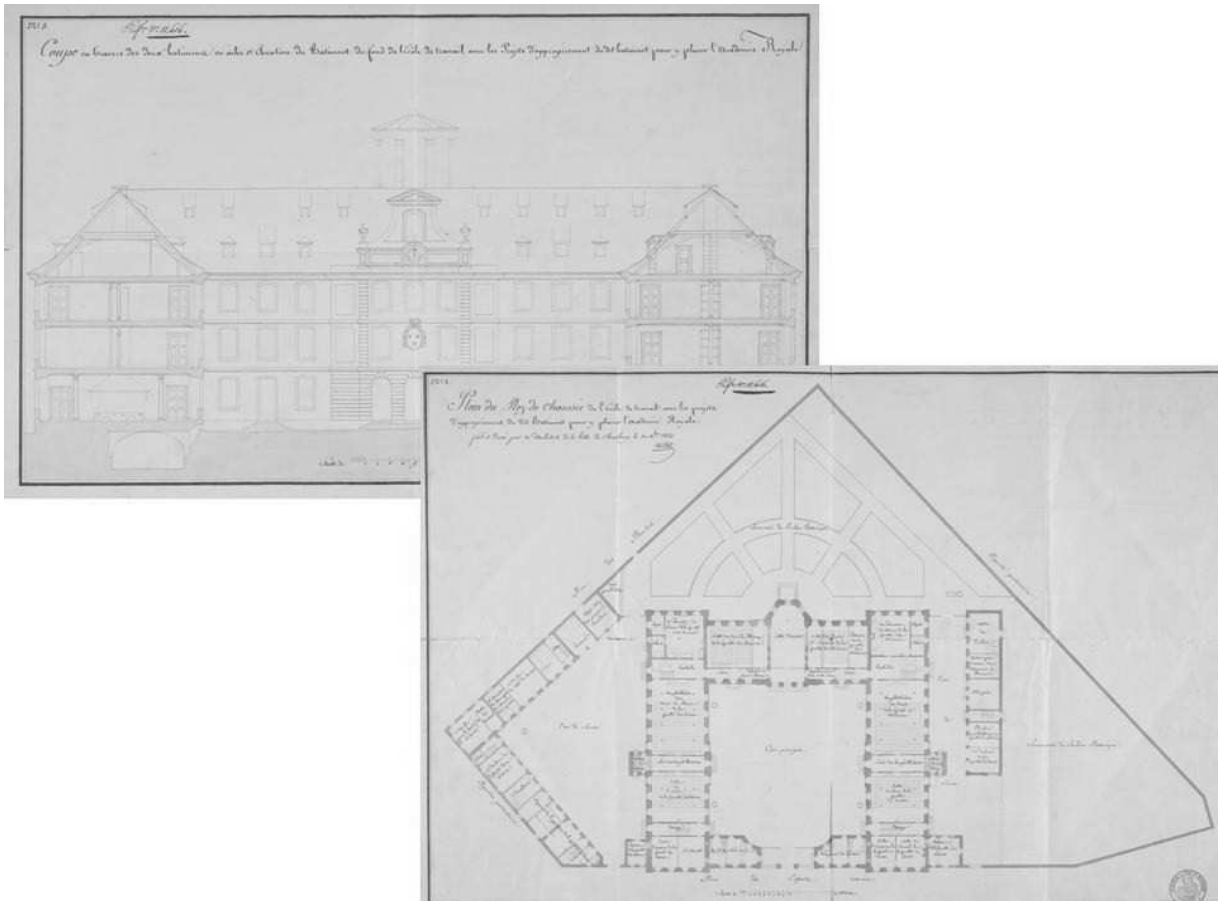

Fig. 2. Sketch by Architect Villot (dated 30 Oct 1824) of the Academy façade and ground floor layout of the main building and of the dependences, still existing today. (© AVCUS)

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 orphanage[4] 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.

Figure 2 reproduces blueprints [AVCUS 1A119-120] from Architect Jean-Nicolas Villot (1782–1857) showing the Academy 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.

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

[4]For the history of this establishment, see e.g. Hitter (1993) and Jordan (2008).

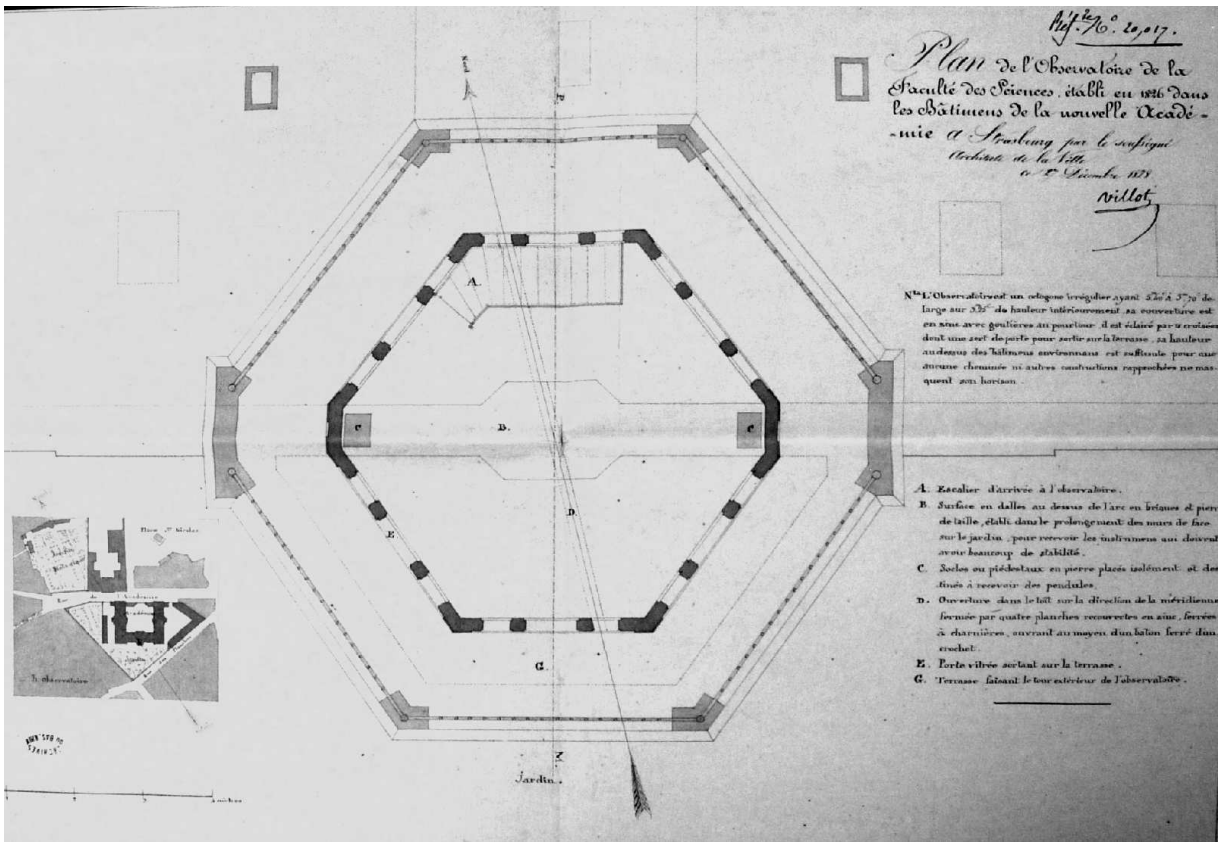

Fig. 3. Floor sketch of the observatory (dated 17 Dec 1828) by Architect Villot. (© AVCUS)

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 Meunier (1779–1838),[5] now Professor of Hygiene and Medical Physics at the Faculty of Medicine, who fancied the observing facility for medical applications of meteorology[6], as well as for what sounds to be playing with camera oscura 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), bas-

[5]Sometimes 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.

[6]The 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 Pasteur (1822–1895), pioneer of microbiology, taught (chemistry) later on in that very Academy building (1849–1854).

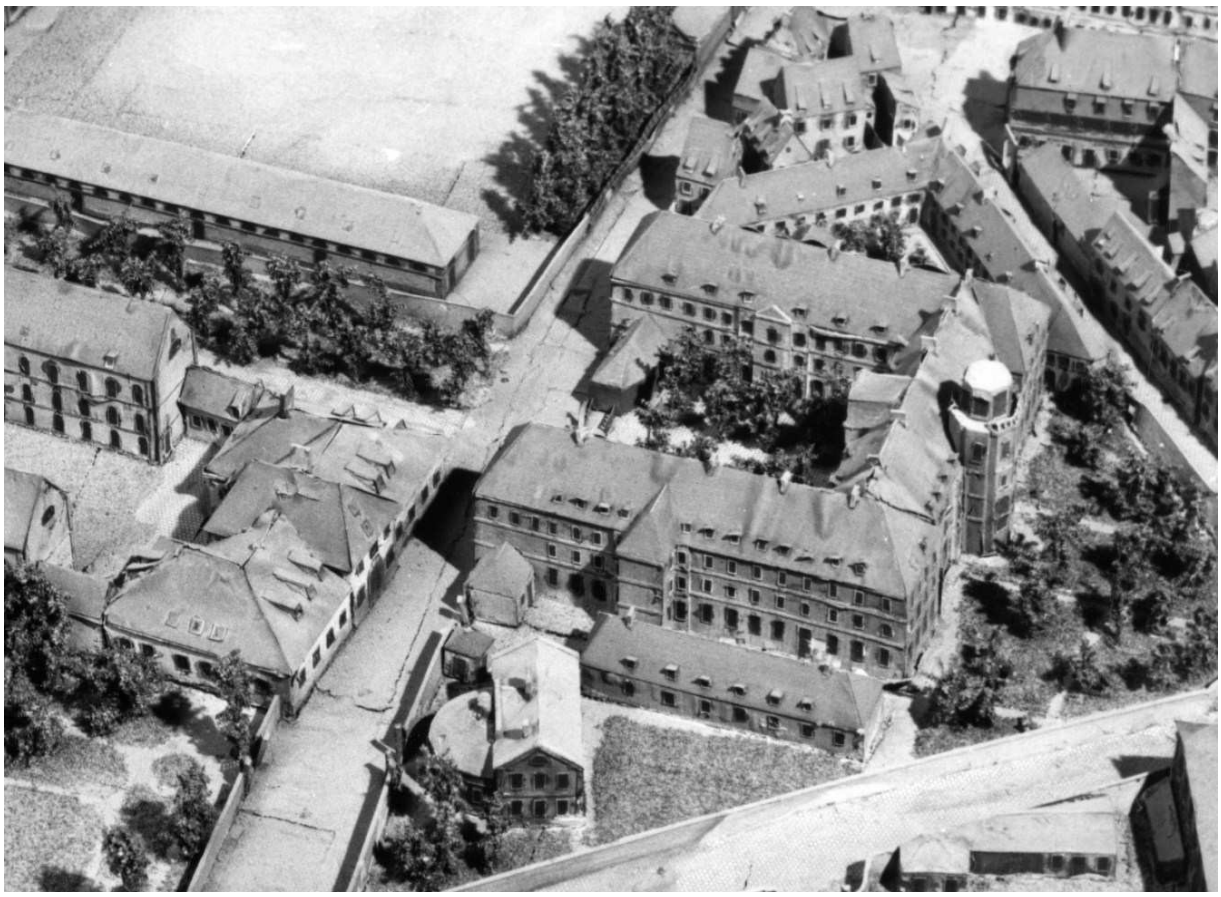

Fig. 4. Close view of the "Academy" building from the 1836 plan-relief of Strasbourg. The observatory is visible over the cylindrical tower protruding from the back side. (© *Inventaire du Patrimoine*, reproduced with permission)

ing their opinion on a comment by Rector Cottard: *"Sorlin's retirement* [*in 1847*] *was a blessing for science."* We cannot agree with such a blunt view as, 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, dated 11 Jun 1827 [ADBR 1TP/GEN107], reporting the severe damage by a strong storm to the observatory and to the laboratory underneath where astronomical instruments were stored.

Sorlin is also the first one to speak of a meridian instrument [same letter] and it is quite likely that in Paris he met or at least heard of his almost exact contemporary, the optician Robert Aglaé Cauchoix (1776–1845) whose name in turn appears in the archives through an 1828 inventory [ADBR 1TP/SUP252] listing *"an achromatic objective of five inches in diameter from Mr Cauchoix, made of two glasses and intended for a meridian refractor."*

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 570 cm, and an inside height of 325 cm; 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.

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 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 feet $^1/_2$*, a polyalde refractor from Mr Cauchoix, an excellent refractor of 4 feet from Munich and finally an objective of 5 inches 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 establish 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 France.

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. Sorlin was succeeded by Pierre Joseph Étienne Finck (1797–1870), apparently more oriented towards mathematics and intellectually diminished in his later career.

In parallel to all this, the archives reveal continual attempts to move the university to some other places: professors unhappy of the Academy 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 Academy observatory.

The *coup de grâce* came from Xavier-Dagobert Bach (1813–1885), a mathematician taking over as Dean of the Faculty of Sciences in 1866. In a document dated from 26 November 1867 on a possible transfer [ADBR 1TP/GEN108], 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.

6 Instrumentation

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, one foot in diameter) and a catadioptric telescope (six inches in diameter, five feet 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 is preparing for 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 (three feet) for year 1827 and Cauchoix's $5''$ achromatic objective doublet for year 1828. Another report dated 10 Dec 1828 [ADBR 1TP/SUP9] includes also an achromatic refractor (2 feet $^1/_2$, mediocre objective), a polyalde refractor from Cauchoix (good) and another refactor from Munich (4 feet, excellent). It precises the cost of Cau-

choix'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 erudites."*

A last piece worth mentioning here is an inventory marked 1843 [ADBR 1TP/SUP261] including new elements such as a refractor from Franckhofer [sic!], a Gregorian telescope, a Galilean refractor, a micrometric refractor from Rochan and a "vitro-cristalline" refractor from Cauchois [sic].

7 Conclusions

Strasbourg's so-called second observatory has been in fact 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 France[7] 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 19$^{\text{th}}$ century prevented effective productivity of the facility. To our knowledge, there is no record in the astronomical literature of observations carried out in the Academy 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 (Fig. 5). For more on this German (Wilhelminian) observatory, please refer to the corresponding chapters of a specific edited volume (Heck 2005).

[7] See Footnote 3.

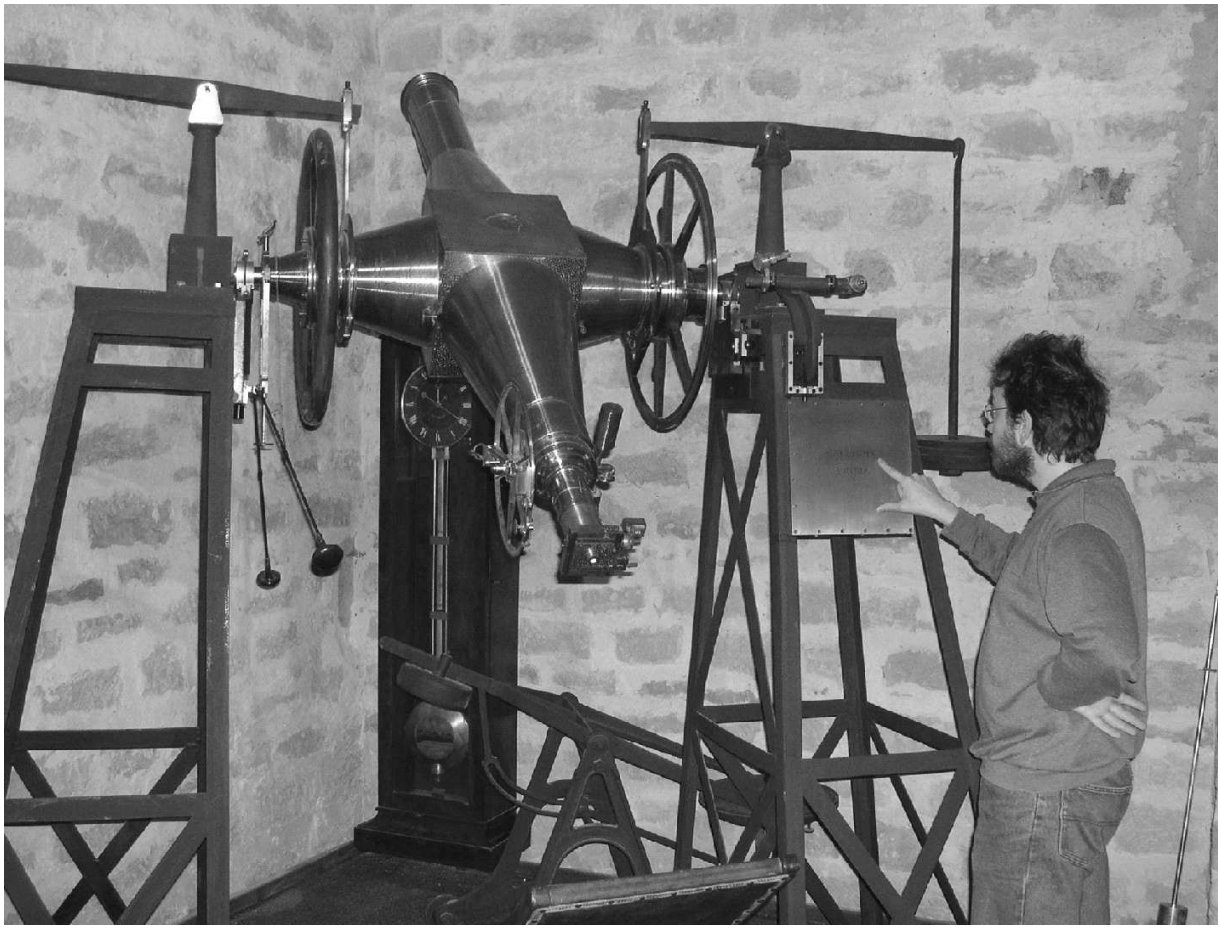

Fig. 5. The meridian instrument equipped with a 19$^{\text{th}}$-century Cauchoix objective doublet as exhibited today in the basement of Strasbourg Observatory. (© A. Heck)

In the course of our investigations, we had the opportunity to visit the Academy building (today a professional school). The layout is still the 19$^{\text{th}}$-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, we 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 the small pyramidal roof visible in Fig. 1.

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