

Charles Messier, Napoleon, and Comet C/1769 P1

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Introduction

In early 2007, I was preparing a talk about the different comet prizes throughout history for the History Section of the German Association of Amateur Astronomers (VdS). While researching these, I found out that Joseph Jérôme Le Français de Lalande (1732-1807) had offered a one-time prize of 600 francs for the first comet discovery of the 19th century. As it turned out, the first comet of the 19th century also signaled a change in the leadership of the dominant comet discoverers at that time. Since 1758, Charles Messier (1730-1817) had dominated (indeed, he had invented) the field; but by the end of the 18th century, Messier was getting old and had to compete with others.¹ Consequently, the first comet of the new century was found in 1801 by a newcomer -- Jean-Louis Pons (1761-1831). Pons managed to better not only Messier but also his close friends and colleagues, Pierre-François-André Méchain (1744-1804) and Alexis Bouvard (1767-1844).

At the least, Messier seemed to be not very happy to have to step back and admit that he was beaten by this newcomer, as can be seen from a later note by Messier (1811):

... the Marseille observer, Mr. Pons, who discovered this [particular comet], took this sum [presumably 600 francs — comet-discovery prize money offered by de Lalande] that the three other [discoverers] yielded to him. Mr. de Lalande consequently undertook to give 100 francs for [each] similar [future comet] discovery, and Mr. Pons has already been gratified several times from this, and the minister gave him several rewards. [The minister?] also [gave] to Mr. de Lalande a sum of 10000 francs, which he used in 1802 to arrange for an annual prize [literally, pension] for astronomy, to be given for the most useful discovery, or the best research memoir in this area of the sciences...²

The attitude expressed in these words made me curious, and I searched catalogues of libraries, as well as of antique-book dealers, for more original material.

Eventually I came across a pamphlet that was self-published by Messier, which showed him quite fittingly in the context of his above-mentioned words. I found this small memoir in the database of one antique-book dealer. The condition of the whole memoir was described as good; however, the price was surprisingly small. After some research about this publication, I was astonished to find it only in a few libraries in Germany and in no other available catalogues of antique book dealers. I also found out about its strange content and asked the book dealer to provide me with a scan of the accompanying star chart. The scan and the obtained information about the booklet convinced me to buy it, and when I finally held it in my hands, I did not regret this decision. The condition is indeed very good. The thick pages are uncut. The booklet consists of eight pages and a folded star chart.

The Memoir

Initially, Messier wanted to have this memoir published in an official publication by Jean Baptiste Joseph Delambre (1749-1822). Delambre refused this, and Messier decided to publish his work at his own expense. As hard as it may seem to accept, the memoir is an ingratiating to Napoleon (1769-1821) in order to receive attention and monetary support. It is full of servility and opportunism. Messier did not even refrain from utilizing astrology to reach his goal. The title-page text (Fig. 1) illustrates this already: "Great comet that appeared at the birth of Napoleon the Great, discovered on August 8, 1769, and observed during four months by Mr. Messier".

The date of the presentation (or delivery) is written by hand and given as Sunday, 1808 February 14. The handwriting appears a bit unsteady, like that of an elderly man, as Messier was in 1808, and comparisons of this handwritten date by D. W. E. Green with specimens of Messier's handwriting in books in the possession of Owen Gingerich and also in the Harvard College Observatory Library indicate that the handwritten date on the title page of this pamphlet is entirely consistent with Messier's handwriting. As Messier had the pamphlet privately published, it is reasonable to assume that he was responsible for its distribution and would have written in the presentation date. The title-page note given below is most interesting:

¹ Jean-Paul Philbert (2000) recently published a biography of Messier.

² edited by Maik Meyer and Daniel Green from independent translations by Hartmut Frommert, Lucie Pintenot, and Brian Marsden; the full original French text, which was transcribed by Jean-Paul Philbert and given to Frommert (who forwarded it to Meyer) is given in the Appendix at the end of this article (this English translation is only a fraction of the entire manuscript text). It is not clear who "the minister" was, and the part about the sum of 10000 francs and de Lalande is difficult to translate without more context.

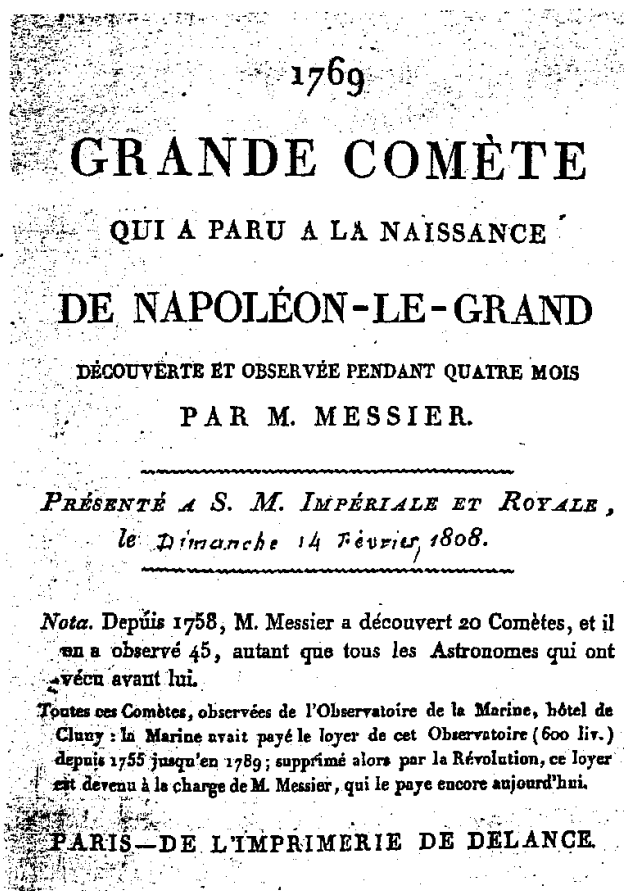


Figure 1. Title page of Messier's memoir of 1808. Photo by the Author.

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[text continued from page 3]

Since 1758, Mr. Messier has discovered 20 comets and observed 45 — as many as all astronomers who lived before him. All comets were observed at the Marine Observatory, Hôtel de Clugny: The Navy paid the rent for observatory (600 liv.³) from 1755 to 1789; since the Revolution, this [financing] has been stopped, and Mr. Messier has paid it by himself since.

It may seem that such a note on the title page is not a very good idea. It gives, however, a clear picture what to expect from the main text of the memoir.

Messier comes quickly to the point on the first page of the memoir, by stating that the beginning of the epoch of Napoleon the Great (i.e., his birthday on 1769 August 15) coincides with the discovery of one of the greatest comets ever observed. He then describes some physical characteristics of the comet with the emphasis on its impressiveness. He gives a maximum tail length of 97°, measured by de la Nux at the Isle de Bourbon.

Messier then explains that he has already discovered many comets by scanning the skies with a telescope, and that this has been something new, later copied by other astronomers. The comet was discovered around 11 o'clock in the evening of August 8, and "preceded the birth of Napoleon the Great by 7 days, [who was] born on the 15th — [starting a] singular and remarkable epoch, and that will serve to record at all the centuries by the periodic returns of this comet, which will not take place until after a long space of time, [as a reminder of] the birth and reign of the hero of the 18th century". This sentence is followed by a footnote that is worthy of mention:

Without doubt, there is nobody who still thinks that the stars have any influence on events on earth; but this great comet, which is different from all others, appeared at the birth of NAPOLEON THE GREAT, at a remarkable time to attract the attention of the whole world, and especially of the French people.

³liv. = livre, French currency.

This sounds like a half-hearted justification of his memoir, and it seems that Messier must have been aware of the impression that his work would have on other astronomers.

Messier then describes how he announced the comet to the King of Prussia, and he received a response. Messier also reports that he presented a large sky chart showing the path of the comet to King Louis XV at Croix-Fontaine on 1769 September 28, on the occasion of the king's return from a deer hunt!

Messier further mentions how his observations were used by astronomers worldwide to derive the orbit and period of the comet. He concludes that "... it is certain that this Great Comet of 1769 will return only after several centuries; it will be called then and at all its revolutions "the birth and reign of NAPOLEON THE GREAT, Emperor of France and King of Italy..."⁴ He closes his pamphlet by drawing connections of a conjunction (of Saturn, Jupiter, Venus, and the Moon near Regulus) and the armistice between France and England, which ended with the peace on 1802 March 26 at Amiens.

The memoir also contains a little gem: a star chart showing the apparent path of the comet through the constellations. This chart is obviously made from the same plate that was used in the original publication about this comet in the *Mémoires de l'Académie Royale* in 1775 (Messier 1775) and is shown in Figure 2.⁵ The engraving of the plate was done by Yves Marie le Gouz (1742-1816), after a draft by Messier. The size is about 50 cm × 20 cm.

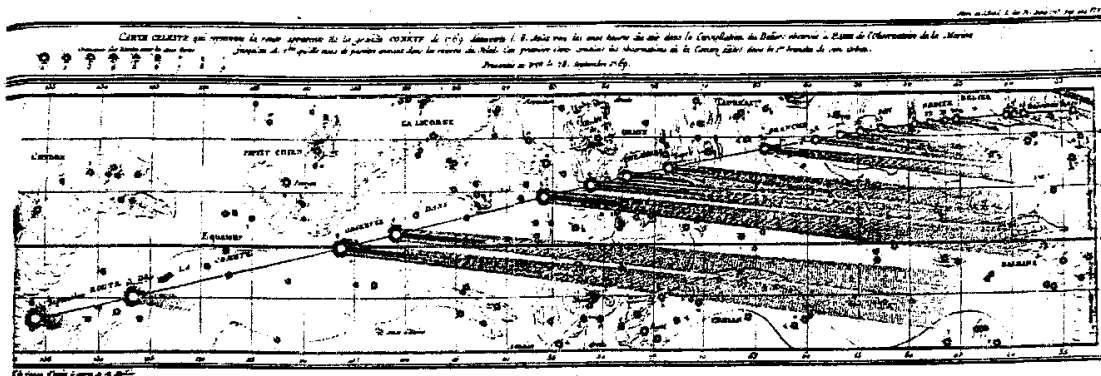


Figure 2. Star chart contained in the memoir.

Historic context

It might be useful to have a closer look at Messier's personal circumstances around the time of the publication of the pamphlet. Until 1789, Messier had earned himself an honored name in astronomy. His comet discoveries led to numerous memberships in national and international academies. The Marine Observatory in Paris, from where he was observing as a chief astronomer, was financed by the Navy. In summer 1789, the French Revolution erupted, culminating in the 'Year of Terror' (1793-1794). Messier lost all his salaries and pension, and he even had to borrow oil for his lamp from Lalande (Frommert 2006). The Navy stopped paying for the Marine Observatory. This was a hard time for Messier, who was then in his sixties. Things got better for him after 1795, and Messier started to observe again from the Marine Observatory, now maintained and financed by himself. His last named comet discovery happened in 1798, and when he was beaten by Pons on the comet of 1801 (C/1801 N1), with which Pons started an impressive career as a comet hunter, Messier seemed to have a hard time accepting that he was no longer dominating the field of comet hunting.

In 1806, Napoleon presented Messier with the Cross of the Legion of Honor. Interestingly, there exists a portrait of Messier showing him at the age of 40 years in 1771, which shows what appears to be the Cross of the Legion of Honor on his suit. This award seems to have prompted the 78-year-old Messier to produce the small memoir about his comet of 1769 (C/1769 P1), which did then harm Messier's reputation as an astronomer considerably.

Epilogue

Napoleon did not take much notice of this memoir. However, Messier's reputation was seriously harmed. The observatory's condition became increasingly bad, since no funds for repair were available. Messier's observing activities almost came to an end. Charles Messier died in 1817, after having experienced a stroke in 1815. Despite the fact that his text gives the impression that Messier only wanted to use impressive heavenly signs such as comets as an anchor point for human memory, it was mostly understood to be astrology. It is now often said that he was possibly the last serious

⁴The translations of this and the previous two passages were by Maik Meyer, edited slightly by B. G. Marsden and D. W. E. Green.

⁵Since the map did not fit on the computer scanner of the author (M. Meyer), the scan is shown courtesy of Giovanni Maria Cagliaris Giangi, Milan.

astronomer who claimed that comets announce events on earth. William Henry Smyth (1788-1865) once remarked on "the last comet put astrologically before the public by an orthodox astronomer" (Frommert 2006).

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Appendix: Text of unpublished handwritten manuscript by Messier (1811), taken here from the unpublished transcription by Jean-Paul Philbert (via Frommert and Meyer).

Comète remarquable, pour avoir été découverte avec des lunettes, le même jours et presque à la même heure par quatre astronomes, en parcourant le ciel avec des lunettes, le 12 juillet vers les 10 heures du soir; à Paris, à l'Observatoire, par Mme. Méchain, et Bouvard séparément, par moi, à mon observatoire, et par M. Pons à Marseille; celui-ci la vit la nuit du 11 au 12, et la prit pour une nébuleuse, mais le 12 au soir, il reconnut que c'estoit une Comète, par le changement de sa position. Elle fut découverte dans la Giraffe, je l'observais depuis le 12 jusqu'au 21 soir, 5 jours d'observations, elle cessa d'être observée dans le petit Lion; M. de Lalande, le plus ancien des astronomes, et le plus zélé pour l'avancement de la Science, avait déposéchez un notaire, avant la découverte de cette Comète, une somme de 600 francs, qui serait donné à celui qui découvrirait le premier une Comète: l'observateur de Marseille, M. Pons, qui découvrit celle-ci, toucha cette somme que les 3 autres lui abandonnèrent. M. de Lalande prit ensuite un engagement de donner 100 francs pour une même découverte et M. Pons en a déjà été gratifié depuis pour plusieurs et le ministre lui a donné plusieurs gratifications. L'on doit aussi à M. de Lalande une somme de 10.000 francs, qu'il a placée en 1802 pour un prix annuel de la rente en faveur de l'astronomie, pour être donné à la plus utile découverte, ou au meilleur mémoire sur cette partie des sciences; il espérait que d'autres feraient d'avantage. v. la Bibliographie astronomique par M...⁶

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Daylight Photometry of C/2006 P1

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On 2007 Jan. 15.479 UT, ten co-added 0.12-sec unfiltered CCD exposures of comet C/2006 P1 (McNaught) were taken by J. Srba and E. Brezina (Vsetin Observatory 6.3-cm *f*/8 Maksutov-Cassegrain telescope + SBIG ST-7 CCD camera + neutral-density filter; shielded to 120 square mm of active telescope area) during broad daylight. The CCD frames, which were processed using standard reduction procedures, were measured in a variety of circular apertures (centered on the central condensation of the coma) for brightness and were corrected for atmospheric extinction. The comparison object was Venus (assuming mag -3.9).

Derived magnitudes for the comet: 30" aperture, -2.5 ± 0.1 ; 60", -3.6 ± 0.1 ; 90", -4.0 ± 0.1 ; 120", -4.3 ± 0.1 ; 180", -4.6 ± 0.15 ; 240", -4.8 ± 0.15 ; 300", -4.9 ± 0.15 ; 360", -5.0 ± 0.15 ; 420", -5.1 ± 0.15 ; 480", -5.2 ± 0.2 . The comet showed a strongly condensed coma with diameter 2/6 and a tail $\approx 30'$ long.

⁶ An English translation of the first part of the text — by Pinentet and Marsden, and edited by Green (see footnote 2) — is as follows: "[A] remarkable comet, to have been discovered with field glasses [on] the same day and almost at the same time by four astronomers searching the sky with field glasses on July 12 at around 10 o'clock in the evening: in Paris at the Observatory by Mechain and Bouvard separately, by me at my observatory, and by Pons in Marseille; Pons saw it the night of July 11/12 and took it to be a nebula, but on the evening of July 12, he recognized that it was a comet by the change in its position. It was discovered in Camelopardalis, [and] I observed it since July 12 and until the evening of July 21 (five days of observations), when it was last observed in Leo Minor. Mr. de Lalande, the oldest of the astronomers and the most zealous for the advancement of the science, had — before the discovery of this comet — deposited at a notary a sum of 600 francs, which was to be given to the person who would discover a comet first."