

Forging the Moon¹

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The first object to be mechanically reproduced with commercial success, besides coins themselves, was the printed book. We now tend to handle old books with reverence and affection, although once they were media's cheap upstarts, seemingly destined to a short shelf-life. The current value, or rather price, of old books depends on several factors: whether the title is generally considered to be important, how many copies survived, their physical state, etc. The rare book world, like many forms of collecting, is a conservative one, its favored titles generally well established, the location of potential copies carefully noted for future sale. One of the most profitable fields of book collecting in the postwar period, in terms of prices beating inflation, is the history of science.² The dotcom boom has driven prices for canonical books in this field beyond the means of most institutional libraries, who are now, more than ever, reliant on the donation of private collections. It is uncommon, although not at all impossible, for wonderful new copies of very old books to appear; a dealer's reputation and fortune is largely built on his ability to create and fulfill a client's bibliophilic dreams. Consequently, knowledge of new sources is a prized possession, suspicion and skepticism ubiquitous.

Rare books are just that, both "scarce" and "unusual," whence derives their agreed value. So when a new source, containing multiple copies, of very rare books, bubbles up, experts' senses become heightened, in a flux between excitement and incredulity. In the early 2000s, one such oasis suddenly sprang from Argentina, apparently unblocked by economic crisis. Centering on first editions of Galileo (1564–1642), a relatively large supply of highly desirable copies

1 Read 24 April 2015 as part of the symposium *Fabrication, Verification, Authentication*. An earlier version of this text appeared as *Fausaire de lune. Autopsie d'une imposture, Galilée et ses contrefacteurs* (Paris: Bibliothèque Nationale de France, 2015).

2 Statistics are hard to come by, as very few copies of classic scientific texts have resurfaced at auction within the period covered by *American Book Prices Current*. The *Sidereus Nuncius*, which before 1990 never cost more than about \$50,000, can now sell for up to \$1,000,000.

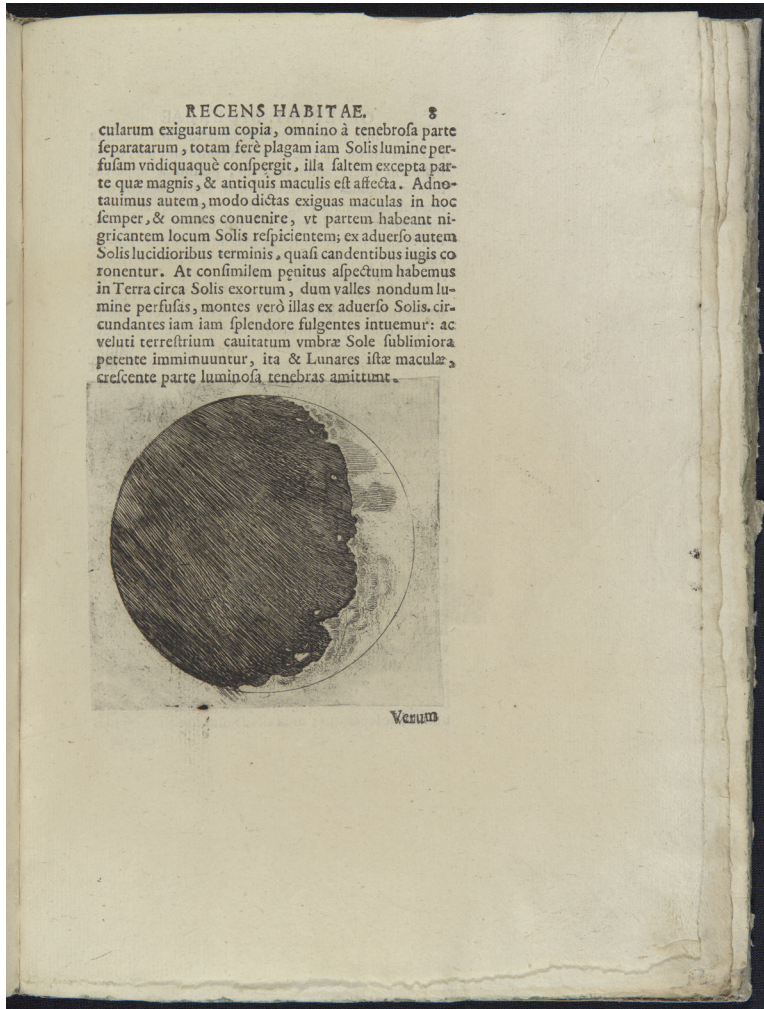


FIGURE 1. Galileo Galilei, *Sidereus Nuncius* (Venice, 1610), B4r. Image courtesy of Rare Book and Special Collections Division, Library of Congress.

appeared on the European and American markets via various routes. Some of these had excellent provenances, others had interesting marginalia or ownership notes, and the stream continued to flow for several years. From the beginning, some dealers had misgivings about the origin of this new material. Rumors of theft and sophistication sullied the waters for some, although no charges were pressed. Amid this steady trickle of books, one item in particular shone out.

In 2005, a very strange copy of Galileo's 1610 *Sidereus Nuncius* appeared, bought by the New York antiquarian book dealers Martayan Lan. An article in *TIME Magazine* claimed that the probable price tag

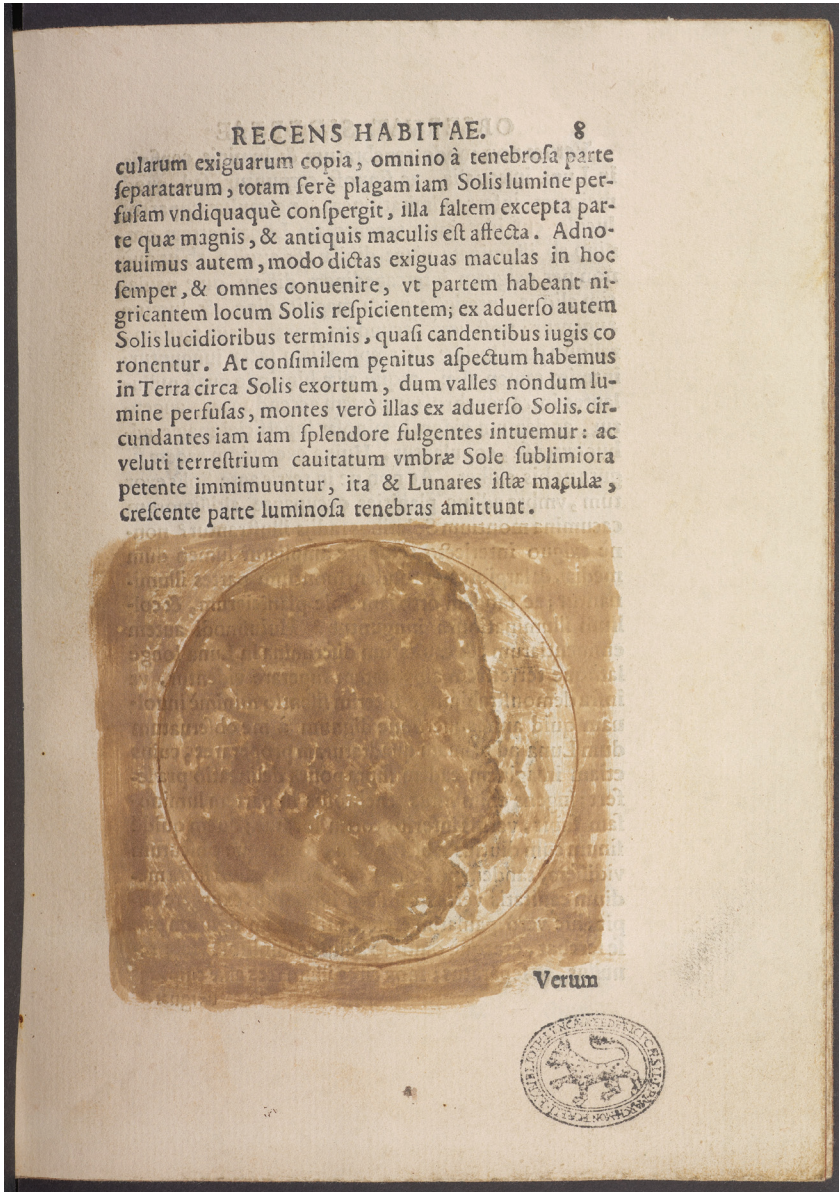


FIGURE 2. SNML, B4r. Image courtesy of Martayan Lan.

would be over \$10,000,000.³ What made the book so special was that although almost all of the 550 original copies printed contained five delicate etchings showing the phases of the moon, with around 24 lacking these, this one copy, uniquely, was hand illustrated (Figures 1 and 2).

3 Jeff Israely, "Galileo's Moon View," *TIME Magazine*, 16 August 2007, p. 39.

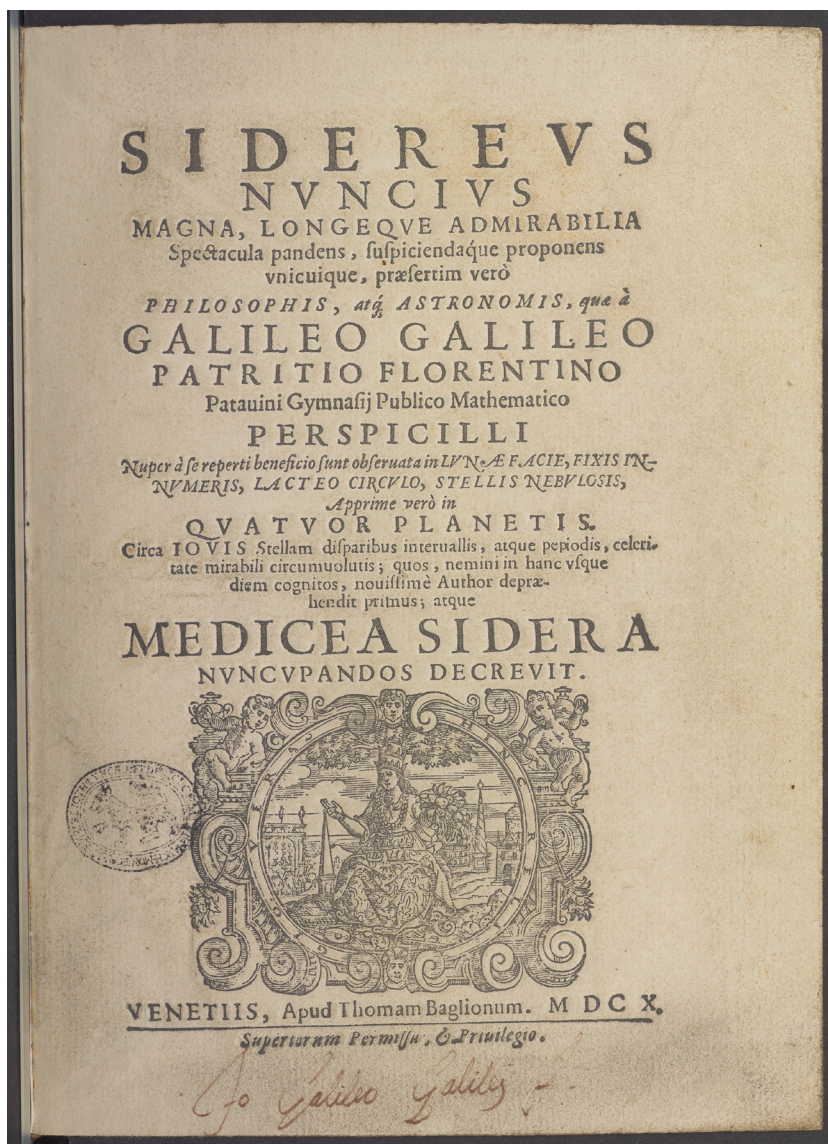


FIGURE 3. SNML title page. Image courtesy of Martayan Lan.

Lunar mountains and craters squirmed through the telescope into human view in dabs and strokes of soft brown bistre, a baroque sepia photograph. In answer to the question of the authorship of these observations was an inscription on the book's title-page: "Io Galileo Galilei f. [I, Galileo Galilei, made this.]" (Figure 3). Here, it seemed, after four

centuries in hiding, was the author's copy of perhaps the most important book in the history of science.

The renowned German intellectual Horst Bredekamp and the Galileo Professor of History of Science at the University of Padua, William Shea, examined the book, and their initial jaded doubts turned into a surprised "Eureka!": they announced the copy's authenticity at a press conference in Padua in 2007. Bredekamp then included an extensive discussion of the Martayan Lan copy in his 2007 book *Galilei der Künstler. Die Zeichnung, der Mond, die Sonne*,⁴ presenting detailed stylistic analysis of the sketches and favorably comparing them to Galileo's other scientific drawings. In 2011, Bredekamp edited a new two-volume study in English, called *Galileo's O*,⁵ dedicated to studying and authenticating the Martayan Lan copy, or SNML, as it had now become known. Bredekamp assembled a team of German, Italian, and American experts who subjected it to a wide range of tests. The second volume, *Galileo Makes a Book*, written by the Scheide librarian Paul Needham, provided a detailed reconstruction of the writing and publication of the *Sidereus Nuncius*, in which SNML occupies only one chapter. Having gleaned more information from it than from any other book ever printed, with the possible exceptions of the Gutenberg Bible and the Shakespeare First Folio, they concluded that this was indeed Galileo's previously unknown copy. The real presence of the lone genius was palpable to the group.

Nor was it merely nice to look at: the bistre sketches of the moon, Bredekamp contended, were not just dull copies of the published etchings but actually their original templates, Galileo's first surviving telescopic observations of the moon. Galileo's inscription was judged authentic, and the book bore a library stamp apparently from his Roman patron, Prince Federico Cesi (1585–1630). Although the paper differed very slightly from the normal stock, it was thought to be because the copy was printed separately, as a proof. One of Needham's most interesting discoveries was that there was a fine paper issue of the book. The tacit argument was that a printshop orderly enough to assemble such copies might also have first used inferior paper for a single proof. It was bound with some other works by Galileo from 1656, and the binding seemed both genuine and original.

This was an amazing discovery: the copy had not been mentioned in 400 years and now provided, it was argued, the first telescopic moon observations by Galileo. But there were some problems: already in 2009, Harvard professor Owen Gingerich questioned the authenticity of the illustrations, pointing out that the lunar phases illustrated in the

4 Berlin: Akademie Verlag, 2007.

5 Berlin: Akademie Verlag, 2011.

book would not have been visible during the short period between the printing of the texts and the making of its etchings.⁶ Gingerich further hinted darkly that not only the illustrations but also the entire book might be a fake, although he provided no evidence as to why he thought this might be the case, or how it might have been done. Although individual pages or gatherings might be supplied in facsimile or forged as broadsheets, it was relatively rare to find entire books forged.⁷ The range of technical skills required for such a job seemed prohibitive; to produce anything longer than a few pages, the risk of error would multiply and make detection all but inevitable. Could a 60-page, seventeenth-century book actually be convincingly forged?

It seemed unlikely. During the research that produced *Galileo's O*, the book had been viewed under three-dimensional microscopes, displaying what the eye and hand already knew—deep type-like bite. Most forgeries are apparent by the superficiality of their printing: they are produced using different printing techniques to letterpress, such as lithograph, laser jet, or pen, and therefore lack its characteristic impression. The ink, at least that of the drawings, underwent analysis and showed no anachronistic traces of post-industrial chemicals. The book was bound, apparently with no obvious signs of tampering, alongside a 1656 selection of Galileo's works in a Roman binding from the Soresini bindery, which reached its zenith in the 1630s. This date seemed close enough, to Needham, who identified the Soresini binding, to fit nicely with the Cesi library stamp, and it was proposed that the copy had passed from Cesi's library to that of the Roman collector Cassiano Dal Pozzo.

There were, however, some other unnoticed problems with this account; so, in a book review in *Renaissance Quarterly*, I pointed them out.⁸

The first is documentary: the *Sidereus Nuncius* does not appear on the extremely full and reliable extant inventories of Cesi's library. Two inventories, now located in the modern Accademia dei Lincei, are available both as digital scans and in a scholarly published edition, edited by Maria Teresa Biagetti in 2008. Biagetti had succeeded in tracing the

6 Owen Gingerich, "The Curious Case of the M-L *Sidereus Nuncius*," *Galilæana* 6 (2009): 141–66.

7 The classic study is John Carter and Graham Pollard, *An Enquiry into the Nature of Certain Nineteenth Century Pamphlets* (London: Constable, 1934). A good overview of techniques and technologies of textual replication is included in David McKitterick, *Old Books, New Technologies: The Representation, Conservation and Transformation of Books since 1700* (Cambridge: Cambridge University Press, 2013).

8 Nick Wilding, "Galileo's *O*," edited by Horst Bredekamp, *Renaissance Quarterly* 65, no. 1 (Spring 2012): 217–8. See also my "Letter to the Editor," *Isis* 103, no. 4 (December 2012): 760, for the first claim in print of definitive evidence of the forged status of SNML.

current location of every extant book mentioned in the inventories and had found no titles with Cesi's library stamp that were not listed there. Enrica Schettini Piazza, who contributed the chapter to *Galileo's O* on "The *Sidereus Nuncius* in Federico Cesi's Library," mentioned the inventories without discussing the *Sidereus's* absence from them, hinting only that a third inventory, no longer extant, might have listed other books. This scholarly lacuna proved nothing in itself, but the Cesi link was central to Needham's hypothetical reconstruction of the copy's illustrious provenance, from Galileo to the Lincei to Cassiano dal Pozzo. The section of Schettini Piazza's chapter that should have dealt with this problem merely ended with an argument as perfectly circular as the book's title:

On the shelves of his [Cesi's] library was also a copy of the first edition of the *Sidereus Nuncius*, with 5 drawings of the surface of the moon in Galileo's hand, discovered by Horst Bredekamp and documented in his fascinating work on Galileo [2007]. The connection to the Academy is clear from the frontispiece, which bears the ex libris stamp of Federico Cesi.

Despite the fact that *Galileo's O* presented itself as an investigation, its conclusions were already reached, it seems, before the team had even assembled. This fundamentally flawed methodology was, in hindsight, to contaminate the entire undertaking at various levels.

What would happen if one were to approach SNML with the assumption that it was, in fact, not Galileo's authorial proof copy, as Bredekamp and Needham claimed, but either a heavily sophisticated 1610 copy or a modern forgery? Which elements' authenticity could actually be proved? The closer I read *Galileo's O*, the more disturbed I became by the team's willingness to use limited evidence and leap to predetermined conclusions.

A case in point is the Cesi stamp so effortlessly authenticated by Schettini Piazza: the bare minimum for an authentication is presumably a comparison with a previously authenticated example, yet in *Galileo's O*, we are offered none, only an irrelevant selection of contemporary images of pretty lynxes. The Cesi library, as Biagetti and Schettini Piazza herself have shown, mainly survives in four contemporary institutions, as well as a few other collections. The big four are the Vatican Library, the University of Bologna Library, the Montpellier Medical Library, and the new Lincei Academy, refounded in Rome in 1847. Using digital images, photos, and published reproductions, I obtained a variety of samples from all of these collections, plus a few from smaller institutional and private collections for good measure. What became immediately apparent was that all of these authenticated stamps were

identical to each other: only one stamp was ever used in Cesi's original library (Figure 4). Next, I compared these genuine stamps to those present in SNML. There were several differences, which could not be explained away by poor inking: every genuine stamp has a break in the inner border; in SNML, it is continuous (Figure 5).

But this is not all: several dealers had noted a strange and very recent increase in the number of books on the market bearing the same stamp as SNML. These included, for example, a copy of Giambattista Della Porta's *De Distillatione* (Rome, 1608), which first surfaced at Filippo Rotundo's Philobiblon. It was sold to Martayan Lan, returned to Philobiblon, sold to a collector, and returned again to Philobiblon. It was puzzlingly described in Martayan Lan's online catalogue as:

First edition and an interesting copy, owned by the dedicatee, Prince Federico Cesi, of Porta's principal work on distillation. [. . .] In addition to the inscription, this copy contains two stamps of the Accademia dei Lincei, and thus at the time of publication, was owned by Prince Federico Cesi, to whom the printed dedication is addressed. Strictly speaking, it may not be the dedication copy in the sense that phrase is usually meant, which Prof. Freedberg, citing Gabrieli, informs us is held by the Corsiniana [sic] in Rome (140.H.22).⁹

The Corsiana's online catalogue confirms Gabrieli's claim, as does an article by Schettini herself, and the copy is, thankfully, still there at this shelfmark. Two identical dedicatory copies? Even for a baroque courtier, this seems excessive. In this case, we have an example of a genuine book whose fake library stamp has been added because supporting documentation made its existence likely. The only problem here is that the original, genuine, dedicatory copy still exists.¹⁰

One highly reputable dealer based in London noted that another Della Porta book had been bought from him in 2005, bearing no library stamps, and then reemerged only a few months later sporting a new Cesi tattoo. The buyer was an Italian dealer named Marino Massimo De Caro, who at this point had a shady reputation concerning stolen books in Argentina and Italy but no criminal convictions. He is now well known for his 2012 arrest and conviction for the massive theft of more than 4,000 rare books from the Girolamini Library in

⁹ Accessed 10 October 2014 at <http://www.martayanlan.com/cgi-bin/searchresults.cgi?item=1199>

¹⁰ Interestingly, the fake Cesi stamps are not the only way it has been doctored: a false wormhole has been gouged through the front endpaper and into the textblock, where it ends after a few pages with a pressure point. The endpaper, which is also far too small to serve its purpose of protecting the textblock, is therefore not only a later addition, which would be quite normal, but also a deceptively doctored supplement whose insertion has actually damaged the original. The inscription, like the library stamps, therefore has nothing to do with the book.

Naples, of which he was the undeserving and unqualified director, as well as from several other libraries in Italy. Back in 2005, he had acquired a choice selection of Galilaeana, some of it, as we shall see, released from the Vatican Library. Many dealers were already wary of doing business with him, although the trade's culture favored cautious silence and hints over open denunciation.

Although some dealers knew about the fake Cesi stamps, others in the book trade were left in the dark, and the knock-on effects are numerous. Take the case, for example, of a messy copy of Galileo's *Il Saggiatore* (1623) to see how the historical record can quickly become unusable. In an article published in 2009, Margaret Ford, head of the Books and Manuscripts department at Christie's London, described a copy of Galileo's *Saggiatore* as "sophisticated by the addition of the first quire, detected through its extended margins."¹¹ This first quire also contained a Cesi stamp. When the company catalogued the book in November 2011 (Sale 3013, Lot 101), the important detail of sophistication went unnoted. Despite Ford's perceptive warning, that "since the title-page was not original to the copy, Cesi's ownership could not be interpreted any further than the simple fact that he had owned a copy, a fact one might have surmised anyway, owing to his and Galileo's close association. Any further annotations in the copy would have no bearing on elucidating Cesi's reading of the copy and reaction to the text;" the book was sold for £15,000 and described as simply having a Federico Cesi provenance. Neither Ford nor the cataloguer knew that the stamp was actually forged, which made the book not only not completely Cesi's, but also not at all Cesi's. Indeed, it was described, erroneously, as being a first issue (in fact, the errata sheet of later issues had simply been removed) on thick paper (a subjective term, unless watermarks are examined, and here they were not), placing it in the elite class of that edition. Christie's has made good on their error and refunded the buyer, but has also removed the record from their online archive of sales. It should be noted in this context that Galileo refers in one of his letters to eight copies printed on fine paper, a figure frequently repeated by several dealers as final, especially those close to De Caro in this period, such as Filippo Rotundo and Umberto Pregliasco, in their efforts to push up the price of individual copies.¹² Galileo's statement may well not have been

11 Margaret Ford, "Deconstruction and Reconstruction: Detecting and Interpreting Sophisticated Copies," *Early printed books as material objects proceedings of the Conference organized by the IFLA rare books and manuscripts section, Munich, 19–21 August 2009*. Edited by Bettina Wagner and Marcia Reed (Berlin: De Gruyter Saur, 2010): 291–303.

12 On Rotundo's association with De Caro, and the pair's nefarious dealings in general, see Nicholas Schmidle, "A Very Rare Book," *The New Yorker*, 16 December 2013, pp. 62–73;

as definitive as these dealers would like: he actually only says that within a particular shipment of 50 copies, eight were printed on fine paper.¹³ So far, I've tracked about 17 copies of *Il Saggiatore* in the last decade, which are claimed as members of this hallowed eight, although tracking such copies, as they perhaps acquire new bindings, provenances, cataloguing imprecisions, and euphemisms, is itself far from easy.

Some collectors have ended up with a mix of fake and genuine Cesi stamps. As the forged ones seem generally to be poorly inked and placed on printed areas to be less legible, we may never know which are of recent addition, unless dealers adopt a policy of greater transparency regarding provenance. Martayan Lan unwittingly sold a second edition Copernicus's *De Revolutionibus orbium coelestium* (1566) and a Tartaglia *Quesiti et inventioni diverse* (1546) with fake stamps, alongside genuinely stamped books. Others were sold through Christie's, London; Umberto Pregliasco advertised a copy of Euclid's *Elements* in Arabic (Rome, 1594) with fake Cesi provenance as late as 2008.¹⁴ Nor has this problem even gone away at the time of writing: Amélie Sourget's 2014 catalogue advertised a copy of *I Meteori* by Cesare Rao (Venice, 1582) sporting a fake lynx-fur stamp.¹⁵ I am sure she is not the only one to be handling damaged goods.

So much, for now, for the stamp, a superficial and relatively unimportant piece of evidence at best. It is fake, but that proves nothing about the book itself. What about the other elements of SNML? Let's move on to a brief analysis of the inscription, the one and only element anchoring the copy directly to Galileo. Bredekamp's chapter rightly drew attention to the only other known dedicatory copy of the *Sidereus Nuncius*, now at the University of Oklahoma, which bears Galileo's

Nicolas Barker, "News and Comment," *The Book Collector* (Summer 2014): 193–5; Albert Van Helden, "Unmasking a Galileo Forgery," *Journal for the History of Astronomy* 45 (2014): 361–76; and Massimo Mazzotti, "Faking Galileo," *Los Angeles Review of Books* (Spring 2014).

13 See, for example, Philobiblon's 2014 New York book fair catalogue, no.23, where a copy is described as "One of the eight copies printed on heavy paper." Philobiblon and Pregliasco's 2011 New York show *Around Galileo* upgraded another copy from Bloomsbury's 2009 description of it as "third issue" (Sale NY032, 23 June 2009, Lot 59) to a brand new bibliographical category, hybrid first and fourth issue. Apparently, this copy "exceptionally presents the peculiarities of both the first and the fourth issues: as the first issue, it's printed on thick paper, lacks the first four leaves containing Faber and Stelluti's verses, and shows at page 120 the corrected diagrams, but as the fourth issue, it presents a recasting at page 235, with the additional long errata revised by Galileo himself." This confusion has even entered the best edition of the work, Ottavio Besomi and Mario Helbing's 2005 critical edition (Rome: Antenore, 2005), in which De Caro's presence is often felt.

14 No. 2, accessed at <http://www.preliber.com/files/catalogo%20Madrid.pdf>

15 Catalogue 8, no. 13.

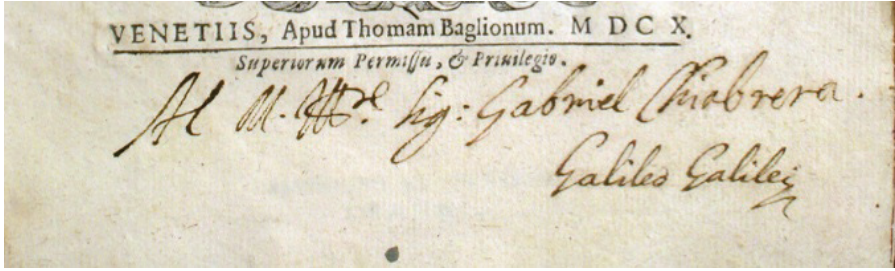


FIGURE 6. Galileo's dedication of a copy of the *Sidereus Nuncius* to Gabriele Chiabrera. Image courtesy of the History of Science Collections, University of Oklahoma Libraries.

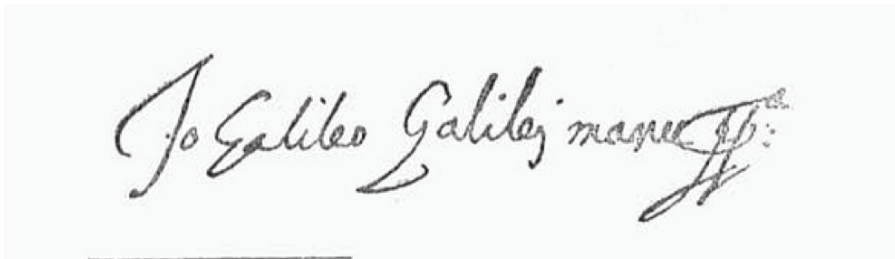


FIGURE 7. Galileo's signature on his abjuration (1633) as reproduced in the National Edition, 1907.

typical signature of the time and one of his two usual dedicatory forms (either "To x, Galileo Galilei" or "To x, the Author") (Figure 6).

A basic comparison of signatures, even to an amateur, flatly contradicts Bredekamp's assertion that "its authenticity is beyond doubt." Bredekamp even psychologized the inscription and argued that the fact the quill ran out of ink and left a deep scratch in the paper had meaning: "The palpable pride with which Galileo evoked the grandeur of an artist's signature is manifest in the pressure of the writing."¹⁶ In vain have I searched among Galileo's papers for another example of his quill running out of ink. Galileo knew how to write, in every sense, and his quill, as was normal, could hold enough ink for a few lines, not a few words: in the draft of the *Sidereus Nuncius*, he usually refills every 70 to 100 words. And when quills do run out of ink, they do not plough a trough into the paper like a steel nib. Quills are flexible and soft, which is what makes them so good for writing. The forged inscription was written with a metal nib, by someone who forgot to recharge it with ink after several practices

¹⁶ Galileo's O 1: 38.

on scrap paper. How this clear evidence of forgery became a moment of communion with Galileo's genius is a mystery and a mistake.

In fact, every element reproduced by Bredekamp makes his argument less tenable, his selective reading of the evidence more apparent. The signature simply doesn't look anything like the real thing from 1610. It does, as Needham first noticed, resemble extremely closely Galileo's signature to his 1633 abjuration (Figure 7). Indeed, the one signature reproduced by Bredekamp that does resemble that on SNML is from a letter dated 1634. How did a 1633 signature get onto a 1610 document? It could not, in Bredekamp's reconstruction, have simply been written in 1633 because it literally underwrote the illustrations, which he said were done in 1610. Cesi had died in 1630, so a 1630s signature would postdate the library stamps. It seems improbable that Galileo stopped off at the Cesi library on his way to trial.

Bredekamp drew, with great originality, on some sources hardly noticed by Galileo scholars: two books in the Biblioteca Nazionale di Firenze with Galileo ownership inscriptions. One of these, a copy of the 1492 *Alphonsine Tables*, handily bears the date 1610, and the signature does indeed conform closely to that of SNML.¹⁷ This would seem to be good evidence. However, a close examination of the page upon which this signature appears reveals that the copy of the *Alphonsine Tables*, purchased by the Biblioteca Nazionale Centrale di Firenze in the 1880s, is itself sophisticated. The title page is a facsimile, tipped in to a genuine copy. The signature is therefore a forgery, perhaps based on the undated *ex libris* also reproduced by Bredekamp, an annotated 1509 Horace, whose authenticity might seem fairly certain due to the marginalia's dullness.¹⁸ Given, though, that Galileo might well have annotated Horace in his youth but not in his old age, I'm inclined to think that here, too, the signature is fake, added to a copy with genuine marginalia. The abjuration signature had been frequently reproduced in facsimile since the mid-nineteenth century.

The forged *Alphonsine Tables* inscription, it seems, was part of a massive scandal discovered in Italy in the 1840s, centering on a huge and absurd cache of fake documents concerning Torquato Tasso. Count Mariano Alberti claimed to have amassed or discovered thousands of letters, poems, and supporting documentation concerning the poet and tried both to exhibit and sell the trove. A panel of experts worked through the papers and found them to be completely (and quite poorly) forged. After the trial, a book was published listing all the forged

17 Biblioteca Nazionale Centrale di Firenze B.R., 152.

18 Biblioteca Nazionale Centrale di Firenze B.R., 247.

documents and the reasons for the committee's deauthentication.¹⁹ Among the fake documents was a now lost copy of *Dialogo di M. Iacomo Cabriele, nel quale de la sphaera, et de gli orti et occasi de le stelle, minutamente si ragiona* (Venice, 1545) with the same legalistic inscription as that of the *Alphonsine Tables*: "*Pertinet mihi Galileo Galilei.*" The Gabriele *Dialogo* contained both Tasso marginalia and Galileo's acerbic responses to his least favorite poet. Both sets of marginalia were declared forged, and it seems likely, given the peculiarity of the note of possession's Latin form, that the *Dialogo*, *Poemata*, and *Alphonsine Tables* are, in fact, Alberti's forgeries.

It's not, of course, Bredekamp's fault that he was again duped by these little-known nineteenth-century forgeries in his quest for evidence to back up SNML's authenticity. Panglossianly, they would not even have been detected were it not for his use of them. The books probably came to his attention due to their display in the exhibition at the Biblioteca Nazionale Centrale di Firenze *Galileo e l'universo de suoi libri* in 2008–9, where their authenticity by the library was not questioned.²⁰ However, a close examination of the title page of the *Alphonise Tables* would immediately have revealed its fraudulent nature, if not the bizarre context of its production. My attention was drawn to it by Professor Noel Swerdlow, who thought it historically unlikely that Galileo would have been reading such an outdated astronomical text in his *annus mirabilis* of 1610. The connection to the Alberti trial became apparent simply by googling the atypical phrase "*pertinet mihi Galileo.*" It seems that historians of astronomy, digital resources, and the art of critical bibliography still have something to add to the subject of Galileo.

By this point, it should be obvious that neither of the distinguishing provenance marks on the title page of SNML—the Cesi library stamp and the Galileo inscription—is, in fact, genuine. Not only are they inadmissible as evidence in any claim about the book's Galileian origin, but they also actively argue against such an attribution, as such risky tampering is an unlikely embellishment to a genuine object.

Concerning the illustrations of the moon, confidently attributed to Galileo on stylistic grounds, I am unable to make a positive contribution. Certain individuals possess an uncanny degree of connoisseurship or technical skill in stylistic analysis. Others, myself included, do not. Ink sketches are notoriously difficult to attribute, although this doesn't mean we shouldn't try. Sadly, Bredekamp's methodology of

19 Tribunale del governo, *Romana di truffa con falsità contro il conte Mariano Alberti . . . il dì 7 luglio 1842: relazione* (Roma: Nella stamperia della Rev. Cam. Apost., 1842). On this episode, see Angelo Solerti, "I manoscritti di Torquato Tasso falsificati dal conte Mariano Alberti," *Giornale storico della letteratura italiana* XIV (1889): 102–28.

20 Elisabetta Benucci (ed.). *Galileo e l'universo dei suoi libri* (Florence: Vallecchi, 2008).

reconstructing the order and movement of individual brushstrokes is flatly discredited here. More worryingly for students of history, the opportunity presented by *Galileo's O, Volume III* to examine the inability of such an approach to identify a forgery was not taken.²¹ Bredekamp's approach, he maintains, was not at fault. It was the forgery that was too good, not his methodology that was too weak.

There were, however, clear warnings: two crucial problems were pointed out during the period between the publication of *Galilei der Künstler* and *Galileo's O*, and neither was addressed. In a perceptive review by Michael Cole, a serious error was noted.²² As Eileen Reeves had argued, Galileo's drawings of the moon in what is now known as the "Florentine bifolium," a sheet of watercolor sketches housed at the Biblioteca Nazionale Centrale di Firenze, Ms. Gal. 48, 28r-29v, not only display the features of the moon as seen through a telescope but also make a contribution to an ongoing argument about earthshine.²³ Galileo was particularly proud of his argument that the "ashen" face of the moon was due not to any inherent lunar luminescence but the earth's reflected sunlight, perfecting an argument going back at least as far as Leonardo and occupying his Venetian friend, the Servite intellectual Paolo Sarpi. The *Sidereus Nuncius* contains an extended discussion of this phenomenon, Galileo's first outing of his argument in print. On the Florentine bifolium, in the three and one-half of the seven moon drawings that have the sky filled in, the night sky is crucially darker than the dark portions of the lunar surface, illustrating and making visible the subject of a major section of the written text. In the SNML drawings, in the three out of five drawings with the night sky filled with wash, it is actually slightly lighter. This mistake destroys its visual value and contradicts, rather than illustrates, the content of the book.

The second response was a reply to Bredekamp's conjecture that the SNML drawings were not only Galileo's autograph sketches but were also actually the templates upon which the book's etchings were based. In a masterful analysis, the Harvard historian of astronomy Owen Gingerich demonstrated that the observations of the moon contained in those drawings would not have been possible during the short window available in the book's production in the winter of 1609–10 between the printing of those sheets and the printing of the etchings. Bredekamp did not engage with this trenchant criticism, either

21 Berlin: de Gruyter, 2014. See my review "A Galileo Forgery: Unmasking the New York *Sidereus Nuncius*," edited by Horst Bredekamp," *Renaissance Quarterly* 67, no. 4 (2014): 1337–40.

22 *Art Bulletin* XCI, no. 3 (September 2009): 381–4.

23 Eileen Reeves, "Kingdoms of Heaven: Galileo and Sarpi on the Celestial," *Representations* (2009): 61–84.

in the journal *Galilæana*, where it was published and where Bredekamp was offered space to respond, or in *Galileo's O*. A response by one of Bredekamp's collaborators, William Shea, also missed Gingerich's well-aimed point.²⁴

Now, if the Galileo inscription, Galileo drawings, and the Cesi library stamp aren't worth the paper they're written on, what about the paper itself? Despite a series of illuminating discoveries concerning the paper of both the normal and the fine paper runs, the tests conducted on SNML's paper were in retrospect completely inadequate. Needham, Brückle, and Mayer perceptively noted inexplicable alternations between two thicknesses of paper in SNML. The book had not been printed on full sheets, as a normal quarto, but on half sheets, set up in a different imposition, making SNML technically its own issue. Close analysis of watermarks, paper weight, and mould sides produced a surprising pattern: no half-sheet is matched to its other half-sheet, yet the order of half-sheets alternates with perfect regularity. Needham put this down to an unknown technique in the handling of the paper,²⁵ while Brückle, Mayer, and Smith thought that "care was taken to combine one thin and one thick paper in assembling each quire, possibly to average out the thickness and structural characteristics of the book overall."²⁶ But not all book production illustrates Intelligent Design. A more obvious answer would have been that a forger was attempting to create the impression of using whole sheets by placing separately made half-sheets together, unaware of the differing thicknesses and their telltale trace of misconduct.

Perhaps more serious than this underinterpretation of evidence was the merely rhetorical nature of the scientific tests performed on SNML's paper. Tests such as ultraviolet and infrared reflectography, 3-D confocal microscopy, and micro X-ray fluorescence analysis led in 2011 to the following conclusion: "Overall, the evidence of the paper fits well with other evidence presented in this volume indicating the unique status of the *New York copy* [SNML], which is considered a proof copy."²⁷ Yet when the paper team reassembled to look again at the paper through a microscope after its deauthentication, it immediately became clear that SNML is printed on non-period handmade paper, with cotton linters clearly visible instead of the usual flax from linen rags. This was conclusive evidence that the paper was made later than the early nineteenth century. Visual inspection was followed by

24 Gingerich, "Curious Case"; William Shea, "Owen Gingerich's Curious Case," *Galilæana* 7 (2010): 97–110.

25 *Galileo's O* 2: 184.

26 *Galileo's O* 1: 135.

27 *Galileo's O* 1: 142.

destructive testing, which backed up the evidence of the cotton linters. What, then, were all the graphs and microscopic images doing in volume I? Here, the contributors' retrospection is revealing:

In 2006, we had not considered fibre samples of *SNML* because the originality of the paper had not been disputed That we had decided against sampling the paper in the first investigation seems puzzling in retrospect, but was a rational choice at the time when both the paper and printing were believed to be genuine, and invasive testing was not warranted.²⁸

This statement is probably the most damning in the volume, an admission that the "science" of the first two volumes was not actually to test anything but just to appear scientific, to authenticate with the shimmering aura of the scientific image. What we may learn from such methodological error, though, is that these supposedly revealing tests in fact demonstrate only their own insufficiency. Experimental regress has rarely been so useful: these tests certainly have a role in analysis and conservation, but the ease with which *SNML* passed them should be borne in mind when we confidently use such tests to establish authenticity. And sometimes, simpler observation techniques might be more effective: in this case, a standard microscope offers the best evidence for dating paper, to be followed only with extreme caution by other tests. There might still be something to be said for consciously acquiring experience in the feel, smell, and sound of old paper.

A similar trap was both constructed and fallen into for the central argument establishing *SNML* as a "proof copy." I have already pointed out that such a concept is a bibliographical hapax for this period, a paper phoenix. The nature of the typographical errors of *SNML* that were supposedly subsequently corrected during the normal print run deserves close scrutiny. Needham noted, as had no editor of the text before him, that several stop-press corrections appear in the Venetian edition of 1610. The fact that all examples of the "earliest" state also appear in *SNML* encouraged him to entertain, and then adopt, Bredekamp's thesis that this was, in fact, a collection made up of the earliest of all surviving sheets, which might also be termed a proof copy. What made *SNML* different to other copies with similar early variants was not just its unique paper stock but also a further set of variants not found in other copies, and therefore presumed to precede them. What escaped Needham's attention was the uniform nature of these variants: a broken comma on B3r line 8; a damaged "æ" at C3r line 12; a damaged "r" at F4v line 1; a damaged asterisk at G3r; a missing asterisk at G3v; and

²⁸ *Galileo's O 3*: 36–8.

“cetum” instead of “çetum” at D6r.²⁹ Not a single wrong or inverted sort amongst them, a proof copy without typos. Each piece of type, if that’s what they are, appears to be damaged in the same way, with part of the printing surface missing, and although damaged type is not uncommon, and sometimes even replaced in a seventeenth-century printshop, the cumulative effect of these errors might be to formulate a single doubt about all of them. Why should every error distinguishing SNML from the 1610 edition consist of an absence of impressed character? Within the regime of the hand press, there should be a variety of errors to correct, and even damaged type is often bent or twisted, producing misshapen characters, not merely partially printed ones. What might possibly account for such a peculiar phenomenon? Could another reproduction technique or technology be involved?

What turned out to be less an illuminating parallel than a smoking gun emerged in two independent studies performed on several copies of Galileo’s *Operazioni del Compasso Geometrico e Militare* (Padua, 1606) in February to April 2006. The *Compasso* is a rare book: Galileo claimed that only 60 copies were ever printed, but he was probably lying, as there are around two dozen copies still extant, an implausibly high survival rate for a short technical treatise by a little known author. But this is the kind of book that comes onto the market perhaps once a decade, at best. In 2005, no less than three previously unknown copies appeared for sale in the United States via various routes, all traceable to De Caro and/or Rotundo. The buyer of the first, when offered a Mephistophelean second chance-in-a-lifetime, became suspicious, and asked both Owen Gingerich and Frank Mowery, then paper conservator at the Folger Library, to examine them. Gingerich also examined a third copy. In comparison with the Rosenwald copy at the Library of Congress, both independently realized that the paper watermarks were not right. Mowery wrote up a private report for the collector, and its existence and argument, if not its detailed content, subsequently became well known in the rare book world.³⁰ The report not only convincingly showed that both new copies were fakes but also ventured a hypothesis of their probable mode of production. Mowery noticed that in ornamental woodcut initials, especially, the two forged copies exhibited a markedly inferior quality of impression, as if the texts had been printed not from a woodcut at all but from a plate made from a photograph of the already printed image. Most telling was a clamorous error, superficially obscured by inappropriately heavy underlining in one copy, of a dogleg break through two words in

²⁹ Galileo’s O. 2, 176–7.

³⁰ J. Frank Mowery. *Comparative Analysis of Several Copies of Galileo Galilei’s Le operazioni del compasso geometrico e militare* (privately communicated, Washington, DC, 2006).

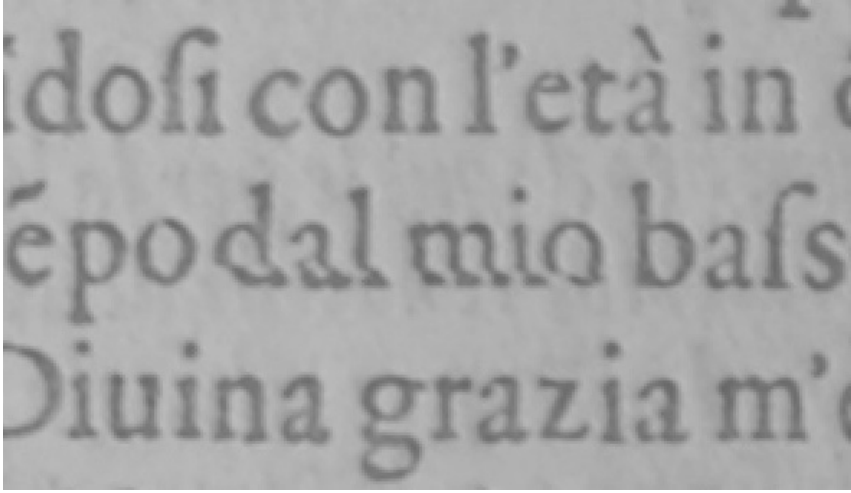


FIGURE 8. Dogleg break in a forged copy of Galileo's *Compasso* (1606). Author's photograph.

Galileo's dedicatory letter (Figure 8). Mowery remarked, "this could not happen with letter press work, but could happen with a flawed photo-reproduction process used to create polymer plates that could be printed from."³¹ This was a radical insight.

Photopolymer plates are cheap, easy to make, and have, since their first introduction in the 1970s, become the standard material for most relief printing. A standard A4 unexposed sheet costs less than \$20. The unexposed plates are available in a variety of sizes and can easily be cut to size. A photographic image is laid over the light-sensitive surface, and the plate given a timed ultraviolet light exposure. This process hardens the photopolymer surface of the plate, which is then placed in a cleaner. The non-exposed portions of the plate are water soluble and simply wash away, leaving the exposed portions hardened and standing proud. The plates can be produced in the printshop with relatively cheap equipment, or ordered from a variety of companies, to whom one merely supplies a digital or film negative. Some post-production editing is also possible: any extraneous or imprecise elements of the plate can be removed with a fine chisel. The plate is used on a standard rolling press, and the resulting impression is almost impossible to differentiate from type. Because a negative image of a printed page is used, photopolymer can convincingly print text along with woodcuts, which themselves were printed with a single pull of the press from a forme in a chase containing both metal and wooden elements. The technique, however, requires some

³¹ Mowery, *Comparative Analysis*, 8.

expertise to reproduce the effects of other kinds of printing. Etchings and engravings, for example, require much higher pressure than type and woodcuts, and were printed on a different press. When a printed book contains both text and engravings on the same page, that paper has been through two different presses. A book containing only text, or text and ornaments, is probably the easiest to reproduce using photopolymer plates. The inclusion of woodcuts presents only challenges of precision. But reproducing etchings requires not only a sophisticated understanding of the variables of the plate-making process but also long experience with different kinds of presses. One of the effects that must be reproduced when photomechanically printing engravings is the plate press, the area of the paper that receives little or no ink, but still comes into contact, in the original, with the metal plate under immense pressure, flattening the paper. Photopolymer reproduction of a page composed of both text and engravings would therefore require two plates, to be printed under different pressures.

Such knowledge is far from arcane. In the bestselling bibliographical thriller Arturo Pérez-Reverte's *The Club Dumas*, the basis for the much less successful film *The Ninth Gate* (1999), first published way back in 1993, the entire process of photopolymer plates to provide near-perfect facsimile pages for a satanic seventeenth-century book is described in detail by two shady restorers:

... the entire page has to be reproduced using a moldable material—resin or metal. Such a plate creates very similar effects to printing with the kind of moveable lead types used in 1666. We put the plate on the press and print the page manually, as was done four centuries ago . . . using paper that dates from the same time, of course, or treated both before and after with artificial aging methods. The composition of the ink must be thoroughly researched. The page is treated with chemical agents so that it matches the other pages. And there you are, the crime is carried out.³²

What, though, was the source for these books? It has been claimed that the digitization of early modern texts has made forgery ridiculously easy, and that institutions are working against their own best interests in making high quality images of their most precious objects freely available. By researching the origin of the forged *Compassos*, we may put this myth to rest, at least in this case. Scans are indeed available of several copies, from sites ranging from the Museo Galileo (MED 2023), to the Biblioteca Nazionale di Firenze (Gal. 39), to the Rare Book Room and Library of Congress (Rosenwald 1335), with images

32 Arturo Pérez-Reverte. *The Club Dumas*, translated from the Spanish by Sonia Soto (New York: Harcourt Brace & Company, 1996). Original Spanish edition published in 1993.

of select pages at the University of Oklahoma History of Science Digitized Images, Caltech's pages, and no doubt others. Projects such as Gallica and the Digital Public Library of America are to be commended, not castigated, for making digital surrogates available. The problem is not one of access but intent. Indeed, in the case of the *Compasso*, it is possible to trace the precise copy used for the forgeries. This story helps illuminate several other forgeries, too.

By making comparisons between copies, not so much in the traditional manner of scholarly collation for textual variants but to identify problem areas in potential source copies, we can not only sometimes identify the individual copy upon which a forgery is based but also gain insights into the process of editing that mediates between the original and its new paper copies. For the vast majority of early modern books, no reliable censuses exist, and the standard tool of WorldCat is patchy (the world of incunabula is better served). It is impossible to examine every copy, so we have to narrow down our search. Institutional copies seem less likely to be used, even when digitized. It is possible that the production of reliable plates, preferably absolutely flat to reduce camera lens distortion, requires either the disbinding or physical manipulation of a book's pages in a manner unacceptable to most institutions. Much better, then, physically to own the source copy, so that photography or scanning can take place on one's own terms. Therefore, source copies are likely to be those seen on the market or known to have passed from one collection to another. The forged *Compasso* copies appeared in 2005, excluding the possibility of the use of the only copy to appear at auction recently, several years too late to be used in these forgeries.³³ Only three copies are reported in *American Book Prices Current* for the last 30 years. All of these are traceable and do not match with the forgeries.

There are, however, occasionally other ways that valuable books move around. For reasons that remain entirely unclear and incomprehensible, in February 2003 Cardinal Jorge Maria, then-Cardinal Librarian at the Vatican, agreed to a book swap with De Caro, a once common practice that generally stopped at the end of World War II. Details are hard to come by, but the best information available suggests that De Caro gave the Vatican Apostolic Library a dozen books whose total market worth did not exceed \$100,000. In exchange, he was given a copy of the first book to be printed in Italy (and the first with Greek font), a Lactantius 1465 Opera, and a copy of the highly collectible Renaissance work, the Aldine *Hypnerotomachia Poliphili* (1499). The combined price of these two works easily exceeds \$1 million. In

³³ Christie's, 2008, Sale 2013, Lot 130. The Richard Green copy sold for more than \$500,000.

addition, De Caro was given a priceless collection of four first edition Galileos, all with perfect and prestigious provenance. Here is the fullest list, with their former Vatican Apostolic Library shelfmarks, that I have been able to reconstruct:

- Galileo, *Le operazione del compasso geometrico* (Padua: Pietro Marinelli, 1606), Cicognara.V.512
- Galileo, *Il Saggiatore* (Roma: Giacomo Mascardi, 1623), Barberini.HHH.IV.6
- Galileo, *Dialogo* (Firenze: Gio.Battista Landini, 1632), Barberini.HHH.IV.7
- Galileo, *Discorsi e dimostrazioni* (Leida: Elsevir, 1638), Barberini.EEE.V.38
- [Colonna, Francesco] *Hypnerotomachia Poliphili* (Venezia: Aldus Manutius, 1499) [Inc. Ferr. II. 476] (was Inc. Ferr. II. 524)
- Lactantius, *Opera*. (Subiaco: [Conradus Sweynheym & Arnoldus Pannartz], 1465.) [Inc. Ross. 1345]

The exchange was witnessed by Umberto Pregliasco. Some of these books are easily traced as they move through auction houses since the exchange, although some have disappeared. The *Hypnerotomachia* was sold, for example, by Sotheby's Paris on 12 October 2010 for €132,750.00. The catalogue reproduces its Ferraioli library stamp and duly notes that Ferraioli had sold his library to the Vatican Library in the 1890s. The Cicognara *Compasso*, with its genuine Cesi library stamp and crease on the title page, was illustrated in De Caro's catalogue of the Luigi Nocivelli collection, published in 2007 soon after the collector's death.³⁴ It was subsequently offered for sale by Filippo Rotundo. Its Vatican provenance had been removed, and it had acquired, between 2003 and 2007, a sketch of a compass in the lower margin of the first folio *recto*. Other books from the exchange have also had their Vatican stamps removed.

Despite this evidence of the books' fortunes after their release from the Vatican, when I asked the then-Cardinal Librarian, Jorge Maria Mejia, about the exchange, he assured me that:

... during my tenure no book nor manuscript left its proper place to be put in the hands of anybody. This is a strict norm and as far as I know it was carefully respected during my tenure as well as before and after [. . .] If Mr. Massimo De Caro profited of one or the other of our books or manuscripts, it was entirely on his own without our knowledge let alone permission or any kind of authorization. I am aware certainly at least in general terms of

³⁴ Marino Massimo De Caro, Dario Parisato, e Paola Pugliese (eds.). *Galileo Galilei: le sue idee, il suo mondo, la collezione*, 2 vols. (Verona: Imago mundi, 2007): 11–3.

what happened afterwards with this person on other libraries. I do not remember the Vatican Library being mentioned in relation with such illicit activities. And let me add that I have lost any contact with the person in question for a long time now.³⁵

Perhaps worse than this denial is what happened next within the Vatican Library. Go and request any book on this list today, and you will receive strange responses. The Galileos are simply “unavailable.” The Lactantius was, it is claimed, sold decades ago. The *Hypnerotomachia* never existed: its card in the catalogue has simply been removed. Even the online notes by the former Director of the Printed Books Department, Father William Sheehan, C.S.B., to the digital incunabula catalogue have been purged. The entry for the *Hypnerotomachia* used to read:

... of the six BAV copies cited by Donati, three remain: Inc. Chig. II. 610 (Copy of Fabio Chigi, 1599–1667; Pope Alexander VII from 1655); Inc. Ross. 589; and Inc. Ross. 2175. The other three copies are no longer in the BAV: [Inc. II. 361] (Exchanged with Libraio Moorthamers (Antwerp) October 1934); [Inc. Ferr. II. 476] (was Inc. Ferr. II. 524) (Exchanged with Marino Massimo De Caro (Verona) 13 February 2003); [Inc. Prop. II. 99] (Exchanged with Dario Campelli (Padua) 19 December 1945).

This section was deleted at some point between 2012 and 2014. Some of the Galileo books, such as the Cicognara *Compasso* and Barberini *Saggiatore* are still listed in the Vatican catalogue but are “temporarily” unobtainable when requested; the Barberini *Dialogo* and *Discorsi* are no longer listed. All have, in fact, entered the rare book trade.

When I wrote to the current prefect of the library, Monsignor Cesare Pasini, to request access to the Prefect’s Archives, where details of the exchange are presumably kept, I was met with a polite refusal. Subsequent long distance rummaging that unearthed for the library a miscatalogued and previously undetected Barberini copy of the *Sidereus Nuncius*, for which I expected perhaps a grudging nod of gratitude, instead elicited a request to desist from my investigation.³⁶ What further encouragement is needed?

De Caro’s Vatican contacts provided him with access to other libraries, possession of rare books to forge, possession of a genuine

³⁵ Emailed personal communication, 30 March 2013.

³⁶ The shelfmark of the copy is Stamp.Barb.N.XII.8. It should be noted that when the Vatican Library mounted an exhibition on Galileo in 2009 for the International Year of Astronomy, it had to borrow a copy of the *Sidereus Nuncius* from the Osservatorio Astronomico di Roma (VII.D.7.6.). It might seem strange that the Vatican Library, which encompasses so many popes’ and cardinals’ libraries, should not contain a single copy of this book. Unsubstantiated rumors circulate that only 50 years ago, there were at least five copies there, but that these have all been given away or sold.

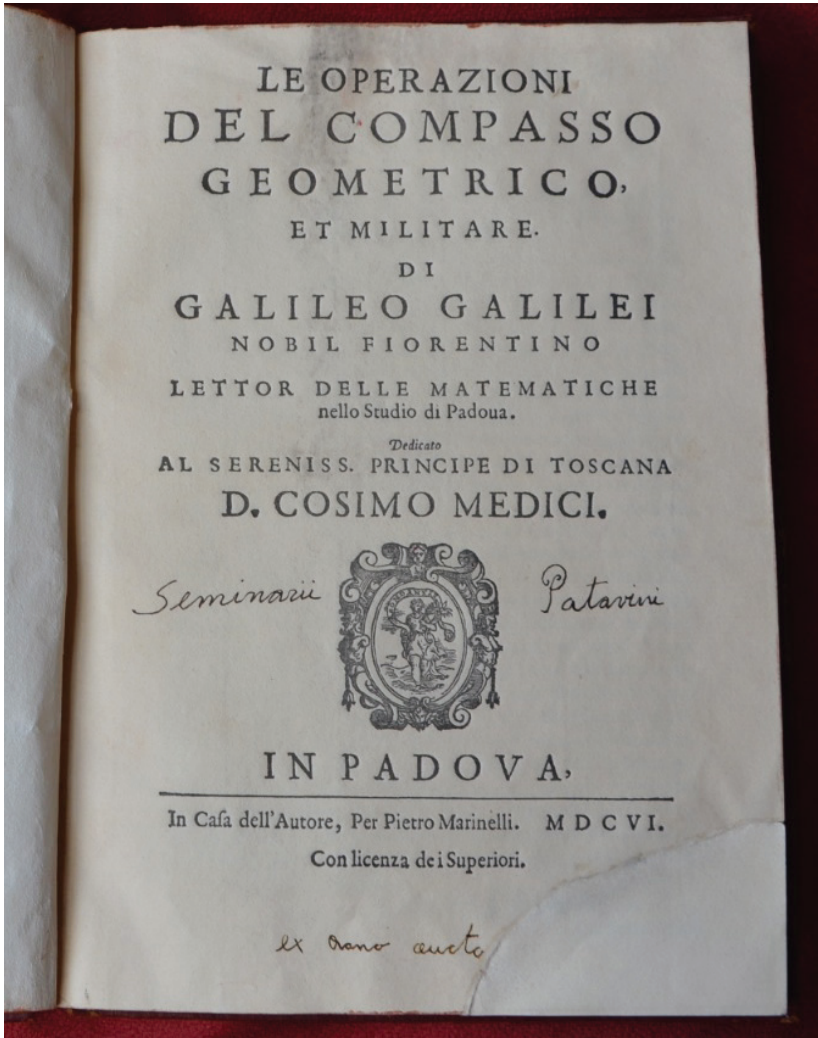


FIGURE 9. Padua fake *Compasso*, title page. Author's photograph.

Cesi library stamp (on the copy of the Cicognara *Compasso*), and a foot in the door to the elite book dealers of the world. Without this exchange, he may well have followed the same criminal course, but Mejia must be held responsible for his disastrous decision to favor this suspected book thief, who had been investigated both in Argentina and Italy, whatever the nature of their personal connection. Presumably, we do not need to write another Dan Brown novel to imagine the motivation for these lies and destruction of evidence. De Caro himself claims that he befriended the Argentinian Cardinal Mejia in a bookstore in Buenos Aires, and perhaps we are merely witnessing what happens

when a charismatic conman takes advantage of an innocent and naive victim. Still, given De Caro's uncanny ability to befriend criminals (his main patron was Berlusconi's lawyer, Marcello Dell'Utri, now serving 7 years' imprisonment for collusion with the Mafia), one has to wonder why the Vatican went to such lengths to cover up the exchange.

That this was clearly a miserable and embarrassing deal is, of course, the Vatican's own business. The transaction met with fierce internal resistance from those professional librarians who saw the library needlessly giving away its precious treasures. Mejia also provided De Caro with a document for each book, saying it had been legally released from the library, and gave him an impressive letter of recommendation, which gained him access to an as yet unknown number of ecclesiastical libraries. What he did with that access should give all librarians nightmares.

In 2005, De Caro gave his sole academic presentation at a conference in which Cardinal Mejia was also listed as a speaker, at the Bishop's Seminary Library in Padua. His chosen topic was a discovery he claimed to have made in the library, an unprecedented presentation copy of Galileo's *Operazioni* (Figure 9). It was, he said, located high in a cupboard. For some reason, the great late-nineteenth-century Galileo scholar Antonio Favaro, who worked extensively in the library while professor at Padua, and every librarian before and after him, had failed to spot it. De Caro even located a record supposedly from the old card catalogue. The catalogue has been digitized, and the copy's record is now in the national database. Suspicious of such provenance, I contacted the librarian, and asked to see an image of their *Compasso's* dedicatory letter. Upon examination, the copy proved to be a fake, exhibiting the same dog-leg slip and bad watermarks as those studied by Gingerich and Mowery. Worse, the library had also suffered the loss during the period in which De Caro was granted unsupervised stack access, of 15 fifteenth- and sixteenth- century books, including copies of Alberti's 1485 *De re aedificatoria*, and eight books from the famous press of Aldus Manutius. De Caro had been denounced as a suspect in 2005 for these thefts, but the inquiry, if it ever started, went nowhere.

Worse was yet to come: the director of the library contacted the only other library listing a copy of Galileo's *Operazioni* on the national library database to check that my claims of forgery were verifiable—the Benedictine library of Montecassino. It turned out that their copy had been stolen, sliced from its sammelband and clumsily replaced with yet another fake. De Caro had visited the library on several occasions in 2011, using his position as ministerial aide to gain access to the stacks. This copy has not been located.

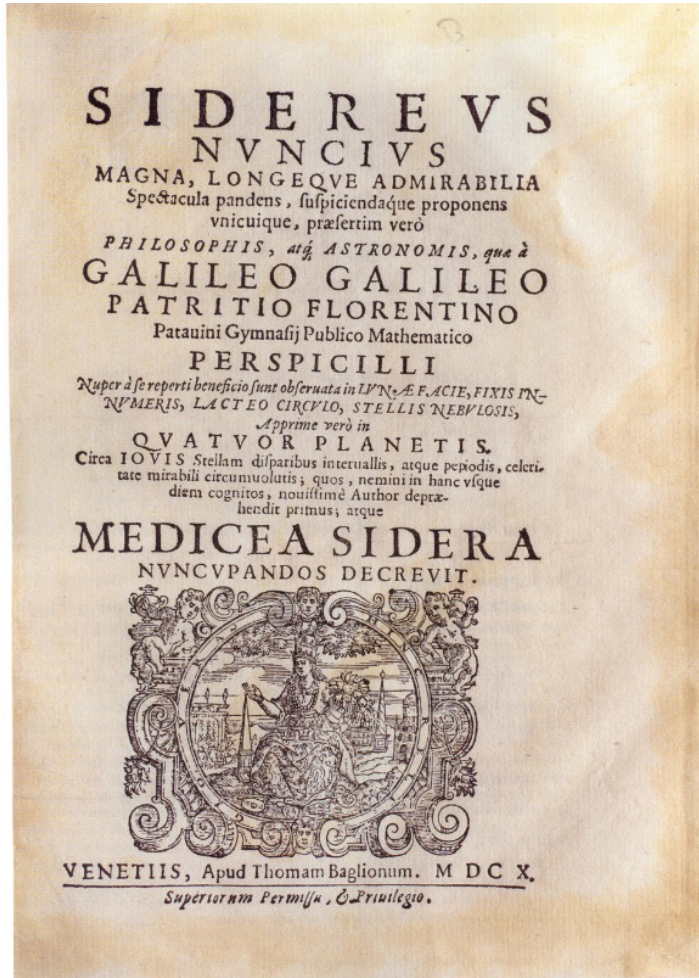
The copy of the *Compasso* De Caro obtained in the 2003 Vatican exchange was, fortunately, previously microfilmed along with the rest

of the Cicognara collection in the 1980s. Close comparison between the microfilm and De Caro's forged copies shows that the former Vatican copy provided the template for the digitally edited forgeries.

Before returning to SNML, we have to make one last excursus. One of the many useful pieces of information of which Bredekamp and his academic team were not informed when they began their process of authenticating that copy in 2006 was that both Gingerich and Richard Lan had also examined another copy of the *Sidereus Nuncius* in April 2005. Gingerich was puzzled by it, especially by its supposed etchings of the moon, which he saw were not nearly as subtle and fine as the originals when he made a direct comparison to the two copies in Harvard's Houghton Library.³⁷ Gingerich did not at this point entertain the possibility of forging an entire book, as he had not yet undertaken his examination of the forged *Compasso* copies, so he assumed that the book was genuine, but the etchings more recent additions supplied in facsimile. To understand why this strange hybrid was even imaginable, it should be pointed out that at least 24 copies of the *Sidereus Nuncius* were printed in 1610 without going through the press a second time to receive the lunar etchings. At least 12 of these etchingless copies still survive, mainly in Northern European collections. There were various ways in which De Caro might have become aware of these provocatively anomalous exemplars that bypass the problem of photopolymer reproduction of fine etching. One of them, from the Jagiellonian Library in Krakow, Poland, was stolen in 1999 and might have been seen by De Caro on its long trip back home; another had already been reproduced in facsimile in 1967; and the two copies in Paris lacking etchings had been described by Isabelle Pantin in her unsurpassed edition and French translation of the *Sidereus Nuncius*, published in 1992. Copies in this group occasionally have the images supplied in pen, copied either from the Venetian or the Frankfurt editions. With the advent of photomechanical facsimiles in the nineteenth century, many defective early modern rare books were silently perfected, but no copies of the *Sidereus* are currently known to have photomechanically reproduced facsimiles.³⁸ The practice continues, largely unacknowledged, to this day in some quarters. Gingerich

37 Gingerich memorably described the printed lines of the plate as resembling "cotton threads dragged through snot" (personal conversation).

38 See David McKitterick, *Old Books, New Technologies*. The Linda Hall Library copy of the Frankfurt 1610 *Sidereus*, purchased in 1976, contains some facsimiles, as noted in the Quaritch description: "Sm[all]. 8vo., 58 pp., with a vignette on title, 4 black star maps on 3 folding plates, 3 diagrams, 5 woodcuts of the moon's surface and 65 elementary star plots in letterpress shewing the planets of Jupiter; the 3 folding plates and the leaves B1 and B2 [sic, for B8] (containing 3 woodcuts) in excellent facsimile on old paper; name cut from title page neatly repaired; three lower edges cut into affecting 2 of the woodcuts and 1 line of text; contemporary limp vellum, spine repaired. Frankfort, 1610." With thanks to Bruce Bradley for this information.

FIGURE 10. Sotheby's *Sidereus Nuncius*.

reasoned that at some point, the book under question had had facsimiles printed directly onto its pages. Lan did not buy the book, and it was consigned to Sotheby's New York for auction on November 30 with an estimate of \$250,000, described in the catalogue by Gingerich as an "extraordinary hybrid." The book failed to sell and has since disappeared, but there were still photographs of the title page with which to work (Figure 10).

De Caro, who had offered the chimerical *Sidereus*, returned just over a month later, in May 2005, with an even more peculiar copy. This

time De Caro was accompanied by Filippo Rotundo, a close associate and co-exhibitor of De Caro at the time, although Rotundo has done his best subsequently to distance himself from this close relationship. Lan not only agreed to look at their book but ended up buying it. Other dealers had examined the copy, been uneasy with what they saw, and passed these opinions on to Lan. But the potential profits from this artifact were astounding: he bought it for \$500,000 from Rotundo and De Caro, but its value was estimated at \$10,000,000. The decision was not made on the spot. Lan took the book first to professor David Freedberg, the renowned art historian at Columbia, whose recent work on the visual culture of the Lincei Academy was well received by historians of science and art alike. Freedberg declared himself unable to ascertain the authenticity or otherwise of the lunar drawings, one of the most sensible statements made by any expert to examine the book.³⁹ The book then went with Lan and its sellers to Cambridge, Massachusetts, where it was seen by Gingerich. He, too, was initially cautious about the illustrations, immediately recognizing them as closely resembling those of the famous “Florentine bifolium,” but reluctant to declare them to be in Galileo’s hand. No doubt was expressed about the authenticity of the book itself. With Gingerich’s cautiously positive response, and under some pressure from the sellers, Lan went ahead and purchased the book.⁴⁰

Freedberg then suggested that Lan contact Bredekamp, who had published in 2000 a much-cited essay “Gazing Hands and Blind Spots: Galileo as Draftsman” in *Science in Context*, expanding previous accounts on the interpenetration of science and art in Galileo’s thought, as well as similar accounts of “visual thinking” in the works of intellectuals as diverse as Hobbes, Leibniz, and Darwin. Bredekamp was initially skeptical of SNML’s illustrations but undertook an extensive study and eventually made the images the centerpiece of his 2007 monograph *Galilei der Künstler: der Mond, die Sonne, die Hand*. By April 2007, he was already ready to announce his authentication of SNML at a press conference at Padua University, aided by Professor William Shea.

Brekamp and his team remained uninformed during this early period about the fake *Operazioni*, deauthenticated in Spring 2006, although Gingerich told Bredekamp about them in 2009. Nor were they aware of the peculiar copy of the *Sidereus Nuncius* that failed to sell at Sotheby’s. Despite the fact that the sellers of SNML had provided

39 Emailed personal communication.

40 For excellent accounts of this episode, see both Van Helden, “Unmasking a Galileo Forgery,” and Mazzotti, “Faking Galileo.”

a documented provenance for the book, claiming it had been deaccessioned from a Masonic Library in Buenos Aires (stranger things have happened in the rare book world), Bredekamp's team was told only that it had a South American provenance. This was, to say the least, a shame: Martayan Lan has handled at least one other object with an identical provenance, a 1493 Columbus Letter, possibly the most frequently forged early modern text known.⁴¹ I have not seen the copy, and it may well be genuine, but its shared provenance to a genuine but little known library which seems to have functioned as something of a Trojan Horse would surely have raised some eyebrows.

The professional resistance of some book dealers to divulge information on their sources, and a methodological commitment on the part of some academics to evidence emanating from the artifact itself, rather than its social context and provenance combined hermetically to seal off the Martayan Lan copy from its unsavory but surprisingly close relations. What was needed to fully understand the status of the book, was an approach that removed the book from the laboratory and put it back in the world of auction houses, dealers, and credit-brokering, where value was fixed.

Bredekamp and his team had made the object reveal its apparent secrets by placing it in a tightly circumscribed context consisting of other copies of the *Sidereus Nuncius*, other Galileo books with inscriptions, and other Galileo sketches. This context presupposed that SNML was genuine. Although it might have revealed, with the right comparisons, the falsity of the copy, it was not designed to do so. Given that the object's authentication was not just a matter of bolstering Lan or Bredekamp's international reputations but had very real implications, already visible in the scholarship, for the status of the other objects surrounding it, I decided to assume instead that the object was a modern fake. Such resistant reading might seem a perverse stance for a book reviewer of a scholarly study to take, but at stake was the integrity of the historical record. Counterfactual histories are instructive but must be recognized for what they are. By this, I do not mean that historians are guardians of a sealed tomb of artifacts. I have had more than my fair share of thrilling discoveries in libraries, archives, and galleries, and some of these finds were even reported in *Galileo's O*. But we do

41 "*Epistola Christofori Colom: cui etas nostra multum debet: de Insulis Indie supra gangem nuper invetis* [sic]. 4to. [19.5 x 12 cm]. (4) ff., 33 lines per page printed in gothic type with 1 initial on a1r. Bound in 19th century green morocco with armorial of the Francesco I of the Two Sicilies (reg.1825-30). [. . .] Provenance: Società Democratica Italiana, a Masonic Lodge in Buenos Aires, whose letter of title and release becomes the property of the owner . . ." (Retrieved on 30 June 2014 from http://www.martayanlan.com/cgi-bin/searchresults.cgi?item=1715&start=5&keywords=&map_or_book_id=0)

have a responsibility to use our skills to define and protect authenticity. Even the most radical postmodernist, skeptic, or social constructivist, all of whom have my sympathies, would have some objection to the idea that market forces or technical skill have the right to redefine what constitutes an historical artifact. Of course, such objects are constantly changing, both physically and culturally, and nothing is really as authentic as we would like, but some things are still more authentic than others. Without such distinctions, all branches of knowledge, yea, even the tree itself, falls.

The breakthrough moment in the puzzle of authenticity came through a simple comparison on a laptop screen between the Sotheby's catalogue photograph of its title page and that of the Martayan Lan copy. We tend to think of the printed book as the first triumph of mechanical reproduction: the "print revolution" was generally characterized, until relatively recently, as the invention of the possibility of perfect mechanical textual replication. But in reality, every hand-printed book is different, even copies within the same edition. Variants are manifold—errors were corrected during printing; letters or wood-blocks shifted, wore, or broke; paper quality varied, both by accident and design; books were bound in different styles and materials in various locales. The subsequent vicissitudes of preservation conditions, restoration tastes, and trade practices all leave their marks on books. Nor should we impose too distinct a break between scribal publication and print: not only did manuscript culture survive, even thrive, alongside print, but early modern books were also sometimes hand-colored at the point of production, whatever we may mean by such a slippery concept, which is really best conceived as an open-ended process; authors might add corrections by hand, or paste in corrected slips over some copies. Copies were usually bound, or rebound, at what we generally think of as a point of reception. The production of early modern books was a drawn-out, and geographically diffuse, process. Dedications, ex-libris scrawls, marginalia, doodles, wormholes, tears, and repairs all make each copy physically individual, not identical.

On the title pages of the Martayan Lan and Sotheby's copies of the *Sidereus Nuncius*, there are a series of dots on the page that looked like random ink blots—just the thing one might expect from a messy Venetian printshop, perhaps, especially when producing proof sheets. But the dots were absolutely identical in these two copies and were missing from all other copies. This doubling in itself was suspicious, but more worrying than their repetition was their substance. Analysis of SNML showed that these were not ink blots but products of printing.

One of these dots hovered over the body of a letter “L,” a region where a misplaced full-stop could not physically exist in a text printed with moveable type. It was too early to claim that such a dot in itself deauthenticated the book, but its presence in two copies certainly demolished one of the most cherished and powerful of Bredekamp’s hypotheses, used to explain any anomalies SNML might exhibit, that it was a proof copy, an assemblage of revises printed on a smaller proofing press, a unique artifact even without its inscriptions and illustrations. If SNML was an undiscovered proof copy, so too was the Sotheby’s copy. Much like the glut of copies of the *Compasso* in 2005, the sheer coexistence of these copies seemed highly improbable.

The category of “proof copy” had troubled me as soon as it was proposed: it simply did not fit with what we know of printshop practices or surviving copies. The Princeton historian Anthony Grafton recently published a detailed study of what he called *The Culture of Correction*, the subject of his Panizzi Lectures, and the only objects therein which might safely be called proof copies were marked-up examples archived for the correction of future editions.⁴² Early modern proof copies were simply an oxymoronic anachronism. The discovery of the same anomalous marks in the Sotheby’s copy as in SNML showed that this status had to be rejected: there was simply no plausible explanation for how SNML’s unique identifying features should reappear on another random copy. Therefore, it was not random.

Corrected proof sheets are sometimes found in printed books, and it may well be that SNML was indeed meant to be viewed as a special bound collection of such sheets. The inspiration for this ahistoric invention might well have been a genuine copy of Benedetto Castelli’s *Risposta alle Oppositioni del sig. Lodovico della Colombe* (Florence, 1615), bearing one genuine variant on the title page and catalogued by De Caro in his edition of Nocivelli’s collection as a “printer’s copy.”⁴³ That copy, now in private hands, seems at first sight to have several other proofreader’s marks. In reality, the supposed typographical errors have been hand drawn onto the page in black ink, then corrected in brown ink. One typo does not make a proof copy.

The Sotheby’s *Sidereus* had disappeared, so the only evidence to work from was the two photographs reproduced in the auction catalogue. One of these was of the title page, the other of the spread D5v-D6r, the asterism of the Pleiades. Because the title page was the most heavily reproduced image from multiple copies, allowing for a

⁴² British Library, 2011.

⁴³ De Caro et al. *Galileo Galilei* 2: 34–5.

greater range of comparisons, I decided to see whether that page alone might be capable of revealing the bigger picture. In fact, this fake lion's claw was more than sufficient to reveal the elephant in the room.

In the long title of these two copies, the correct word "periodis" was changed to a mistake, unnoticed by Bredekamp's team, "pepiodis," as though, again, both of these were uncorrected proof copies. As if this were not problematic enough, there was a further contradiction with the way this word appeared: the letters "p" and "i" actually seemed to touch each other. The body of a letter "p" is wider than an "r," so were the erroneous reading "pepiodis" simply to have been corrected to "periodis," the word should have become a little shorter, with the line respaced. But, in fact, the word was the same length as in ordinary copies, and its alignment with surrounding words remained unchanged. The "p" seemed simply to have grown out from the "r," with a malformed descender, making it touch the next letter "i" in a way impossible with type. Printers can insert spaces between letters, but the only way they can make letters touch is to file them down or cast ligatures, and "pi" is not common enough ever to be cast. This evidence was the first real indicator that SNML (and also the Sotheby's copy) had not been printed using moveable type.

All of these problems might perhaps be explained away by the claim that type had ruptured while cast, or that it was worn or cracked. But something more serious was awry: the capital "P" of the word "Privilegio" in the phrase attesting to the book's imprimatur had a large club foot in these Shakespearean-twin comedy copies. That misshapen "P" was uncannily familiar to me, but looking through as many other examples of the *Sidereus* title page as I could find, to assure myself of its ubiquity, there was not a single match. Then, forlornly, I drifted to Wikipedia and saw that it appeared exactly as it looked in the Martayan Lan and Sotheby's copies. This image was based on the standard facsimile reprint from 1964, produced by the Domus Galilaeana in Pisa. It has become the standard reproduction of the title page of the *Sidereus Nuncius*: many scholarly and trade editions use it, even when they claim to be based on other copies.

Needham had, in fact, provided a fascinating aside in *Galileo's O, Volume II*, not only tracing the subsequent unacknowledged uses of the image but also revealing that the 1964 facsimile itself inexplicably lied about its source. Using his ongoing census as a tool, he showed that even though the facsimile claimed to be based on a copy in the Biblioteca Nazionale Centrale di Firenze, it was in reality based on a copy at the Brera Observatory in Milan. I asked Needham for an image of that copy, expecting to find an imprinted "P" from a ruptured sort that would also show up elsewhere, but was as excited as a bathing Archimedes to see

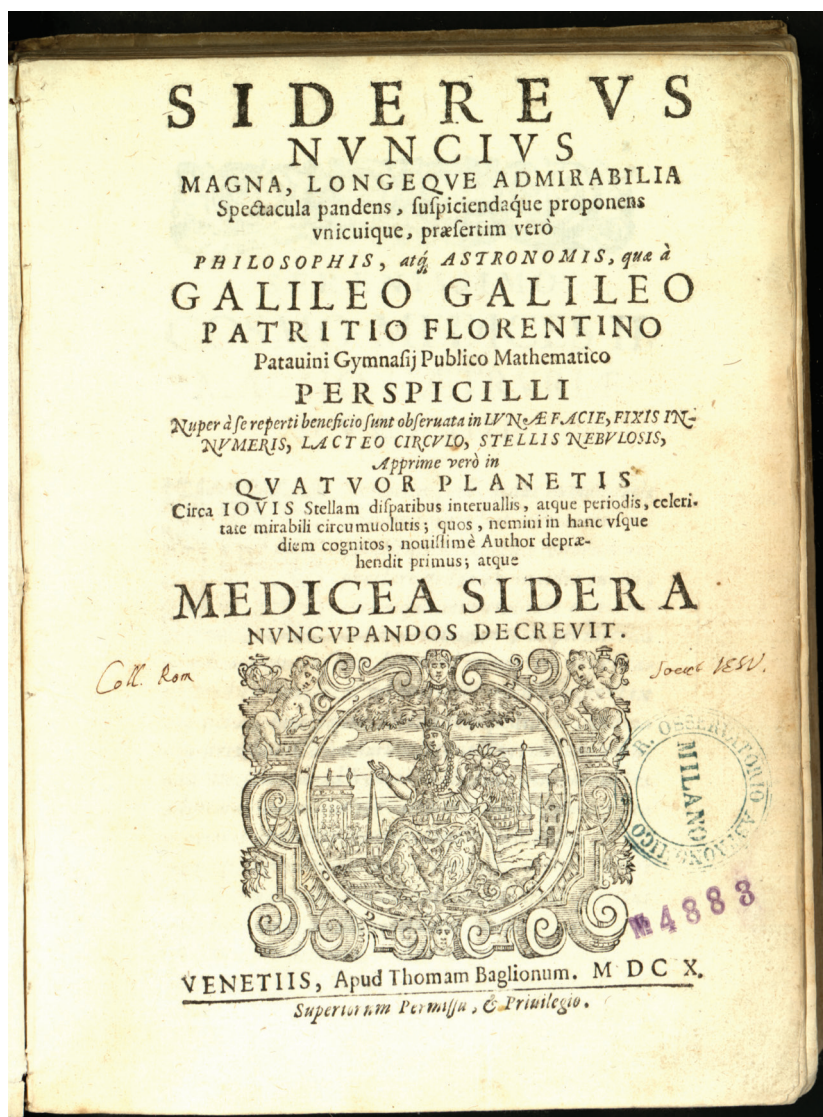


FIGURE 11. Brera *Sidereus Nuncius*. Library of INAF—Osservatorio astronomico di Brera, Milano.

that the Brera copy does not have a misshapen “P”: it has instead a dark brown paper discoloration next to the “P” (Figure 11). When preparing the plates for the facsimile edition, the photo retoucher should have removed this foxing mark, which showed up in the black and white photograph as an unsightly black blob, but instead it was overlooked and turned into a printed ink blot. It then appeared both in print and digitally in every version based on that photograph, directly or indirectly.

But if this mark first came into existence in a 1964 photograph, what was it doing in both the Martayan Lan and Sotheby's copies? Logically, the facsimile must have been used to produce these copies. Despite the barrage of sophisticated tests the Martayan Lan copy passed, this one slip proved that it was a modern forgery. With this knowledge in hand, other mistakes became swiftly visible.

Needham was intrigued and disturbed by this argument, but not completely convinced. He pointed out that there were several elements in SNML's title page that do not come from the 1964 facsimile: in the printer's mark woodcut, for example, he immediately discerned the remnants of the Brera copy's stamp, which the photo retoucher had tried in vain to remove without trace. These did not appear in SNML. This insight proved to be an important one (the title page turned out to be a composite image taken from both the facsimile and a copy advertised by Patrick Sourget in 2005, now untraceable, though Sourget claims it was seized by the police), but at the time, I was so taken with my evidence that I ignored it. How could SNML be based on the 1964 facsimile and also not replicate its most subtle signs? I left this question aside while attempting to draw up another test that would convince Needham that not just the blot on the imprint, but the entire book, was forged.

The Martayan Lan copy has a very deep impression, a feature that encouraged Bredekamp and his team in their authentication. Laser jet and lithographically printed forgeries have no type impression. Needham had ascribed this to the use of a different press to produce the proof copy. When I presented him with the evidence of the dodgy "P," Needham reexamined SNML alongside the genuine copy of Columbia University, and saw that, in fact, this mark, which he had not previously noticed, or perhaps subconsciously disregarded because of its ubiquity in surrogate images, was inked and impressed in the same manner as any other typographical sign or woodcut.

The deep impression itself, hitherto embraced as a sign of authenticity, proved to contain a physical self-contradiction. In many early modern books, especially those produced quickly and cheaply without the use of friskets to protect the paper from incidental inking, one frequently finds lightly inked lines, left by the unintentionally inked "shoulders" of the type. In SNML, these were almost always absent, which was strange considering the evident pressure used to print the sheets. But when they were present, these lines always sank into the page to the *same* depth as the type itself. It is clearly not physically possible for both the protruding letter and its shoulders to be the same height, or leave the same depth of mark. With a photomechanically produced plate, though, whatever is left as a raised surface is left at the same height: if a faint smudge is not erased, it gets turned into a printed

mark. Put more simply: a photopolymer plate is a three-dimensional object made from a two-dimensional image. Whatever registers as black in the image, whether it is a deeply impressed character or a superficial ink mark, becomes the printing surface of the relief plate. The terrain of a composed typographical forme is irregular and craggy, that of a photopolymer plate uniform and canyoned.

What this means is that when you start to think of print as a combination of both inking and impression, a difference emerges between a page printed with type and one with a plate. Incidental shoulder inking has no pressure behind it. Turn the page over and no impact is visible. But if such a page is photographed, used to make a plate, and then printed, the reverse of the page will show pressure marks wherever there is also ink. This hypothesis was tested on SNML alongside a genuine copy at Columbia by Needham, and immediately the impossibility of SNML's authenticity became apparent.

SNML's ink sketches now made sense: in the original 1610 printing, the type and woodcuts were printed first. The sheets were later taken to another press designed to produce the higher pressures required for printing from an etched plate. When it came to forging the book, this effect presented a technical problem: although the bite of type can be convincingly mimicked with photopolymer plates, the fine lines and warm background tones of an etching were beyond the forger's capabilities. The results were apparent in the Sotheby's copy, where the forged type passed muster, but the unconvincing etchings were described as "facsimile." When it came to making SNML, an audacious solution was proposed: rather than merely leaving the etchings unprinted (there may well be further fake copies in circulation in this state), the forger decided to risk everything and fake Galileo's own drawings, his inscribed claim to authorship, and the Cesi library stamp to provide some context of provenance. Such a decision reveals not only a fine understanding of the desires of the rare book world in concocting a unique, unprecedented but plausible copy—it also displays considerable hubris. After all, the Sotheby's copy did not sell, two of the three *Compasso* were caught, and a third *Sidereus*, perhaps still loose in the wild, was spurned by a series of dealers.

The de-authentication of the Martayan Lan copy is not, alas, the end of a story about a rare book dealer fooled by a conman. De Caro, or the team that devised and produced these books and passed them on or off to him, has been extremely busy. De Caro claims he made five copies each of the *Sidereus Nuncius* and the *Compasso*. To this we can probably add at least two copies of the Peruvian biography. The Italian press has mentioned a forgery of Galileo's extremely rare first publication, the *Dialogo de Cecco di Ronchitti* (Padua, 1606), substituted for a stolen

copy in the Biblioteca Capitolare di Verona. Nicholas Schmidle's research for his piece in *The New Yorker* helped uncover probable forgeries of the Frankfurt 1610 edition of the *Sidereus Nuncius*, rarer than the Venetian edition, as well as a forged Kepler *Dissertatio cum Nuncio Sidereo* in the Frankfurt edition of 1611. It seems likely that De Caro made some Columbus Letters, although he denies this and says instead that they were made by a former associate of his. Presumably, these forgeries do not exist in single copies. Other forged copies are slowly emerging from institutional libraries, planted by De Caro to either replace the genuine stolen copies or cover the traces of other thefts.

The importance of this list lies both in its length and its incompleteness. It is crucial that we do not subscribe to a romantic notion of the forgery as consisting essentially of an outsider's challenge to the smug world of academia. SNML is riddled with errors. It is a decent forgery but no masterpiece, and to describe it as such exonerates De Caro from his criminal activities. And neither is it useful to conceive of it and excuse it as a brilliant and isolated hoax, into which massive economic and intellectual effort was poured without aim of profit to reveal the limits of expertise. It was merely the most sophisticated example we have so far detected in a long run of forgeries, whose primary aim was to stand in as surrogates for stolen copies. These books are the product of organized crime. It is crucial that our response to them is adequate.

Of course, as this story has shown all too well, experts are far from infallible. But we can try to learn from our mistakes and make the next forger's job a little harder. There is no simple test for the perfect forgery that does not destroy part of the object it analyzes, and even standard tests have been shown here to be fallible; it is far better to publicize the techniques of manipulation than ignore their existence in the hope that they go away. But if we do not develop the analytical tools to detect such manipulations, we will be in no position whatsoever to write history or trust the institutions that make history possible. This case will not be the last of its kind, but it might be an opportunity for the different professions that decide upon the economic and intellectual value of rare books to realize that if they don't act soon, there will not be value of any kind left.