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Newton's *Philosophiae Naturalis Principia Mathematica* "Jesuit" Edition: the tenor of a huge work. (English summary)

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The authors intend this article as a prolegomenon to a planned English translation of what they take to be the definitive 1822 Glasgow edition of what is sometimes called the "Jesuit Edition" of Newton's *Principia*, published in Geneva in 1739–42. (As the authors note, none of that edition's principal contributors was Jesuit.) The article does not seem to advance the scholarship on the *Principia* or its reception, and its value as a reference seems dubious, at best.

After outlining their paper, the authors survey a range of editions of the *Principia*. The subsequent section offers cursory biographical notes on Thomas Le Seur, François Jacquier, and Jean Louis Calandrini, then notes some typographical and organizational features of the 1822 edition of their 1739–42 work. A final major section characterizes a variety of specific editorial interventions by the three central figures and then considers at length the edition's commentary on the inverse problem of central forces, which the authors stipulate to be paradigmatic. Their approach here follows their prior article [Adv. Hist. Stud. **3** (2014), no. 1, 33–55, doi:10.4236/ahs.2014.31005]. A conclusion outlines a program of research the authors intend to undertake in view of the Jesuit Edition, all of whose components are focused on its context in the first half of the eighteenth century.

The article appears to have been prepared largely independently of Niccolò Guicciardini's excellent "Editing Newton in Geneva and Rome: the annotated edition of the *Principia* by Calandrini, Le Seur and Jacquier" [Ann. of Sci. **72** (2015), no. 3, 337–380; MR3345755], which the the present authors cite, and which covers the relevant historical context (including a large share of the authors' concluding research questions) with a level of precision, nuance, and historiographical sophistication largely lacking in the present article. Guicciardini also makes use of substantial archival material not considered by the authors, who rely primarily on a range of varyingly-up-to-date secondary literature and their examinations of the 1822 edition itself. They depart from Guicciardini in their extended discussion of the commentaries in the text (which the latter confines mostly to online-only appendices); however, most specialists with the expertise and interest to benefit from the former's longer systematic discussion will likely do better by referring directly to the readily available source materials themselves. Numerous oddities and shortcomings in the article's copyediting, including frequent malapropisms and a bibliography roughly sorted by author's first initial, hamper its utility. Claims such as the authors' assertion on page 417 that Galileo and Huygens furnished "the only concrete results in physics" prior to the *Principia* are indicative of the authors' tunnel-vision regarding the history of science and the rich, recent historiography on Newton and his reception.

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References

1. A. N. L. MUNBY: *The distribution of the first edition of Newton's Principia*, Notes and Records of the Royal Society 10, (1952), 28–39.
2. A. RUPERT HALL: *Isaac Newton: Eighteenth-century perspectives*, The Oxford University Press, Oxford, (1999).

3. C. E. EAGLES: *David Gregory and Newtonian Science*, *The British Journal for the History of Science*, 10, 36, (1997), 216–225. [MR0531534 \(58 #26873\)](#)
4. C. HUYGENS: Correspondence 1691–1695, *Oeuvres complètes. Tome X* (edited by J Bosscha), Martinus Nijhoff. Den Haag, (1905).
5. C. HUYGENS: *Discours de la cause de la pesanteur*, In *Oeuvres complètes. Tome XXI. Cosmologie*. Vollgraff (ed). Martinus Nijhoff. Den Haag, ([1690], 1944), 451–488.
6. C. MCLAURIN: *An Account of Sir Isaac Newton's Philosophical Discoveries, in Four Books*, Georg Olms Verlag, New York, ([1748] 1971).
7. D. BERTOLONI MELI: *Equivalence and priority: Newton versus Leibniz*, The Clarendon Press, Oxford, (1993). [MR1336592 \(97c:01018\)](#)
8. D. BERTOLONI MELI: *Thinking with Objects. The Transformation of Mechanics in the Seventeenth Century*, The Johns Opkins University, Baltimore, (2006).
9. D. G. KING HELE - A. RUPERT HALL: (Eds) *Newton's Principia and its Legacy. Proceedings of a Royal Society discussion meeting, held on 30 June 1987*, The Royal Society, London, (1988).
10. D. GREGORY: *Astronomiae Physicae et Geometricae Elementa*, Sheldonian Theatre, Oxford, (1702).
11. E. A. FELLMANN: *The Principia and Continental Mathematicians*, In King–Hele - Rupert Hall (Eds), (1998), 13–34. [MR0928814 \(89d:01020\)](#)
12. É. CHÂTELET (DU): *Isaac Newton. Principes mathématiques de la philosophie naturelle par feu Madame la Marquise Du Châtelet*, Desaint et Saillant, Paris, (1759).
13. E. J. AITON: *The vortex theory of planetary motions*, American Elsevier Publishing Company, New York, (1972).
14. E. J. AITON: *An imaginary error in the celestial mechanics of Leibniz*, *Annals of Science*, 21, 3, (1965), 169–173. Retrieved via: <http://dx.doi.org/10.1080/00033796500200101>.
15. E. J. AITON: *The celestial mechanics of Leibniz in the light of Newtonian criticism*, *Annals of Science*, 18, 1, (1962), 31–41. Retrieved via: <http://dx.doi.org/10.1080/00033796200202682>.
16. E. J. AITON: *The celestial mechanics of Leibniz*, *Annals of Science*, 16, 2, (1960), 65–82. Retrieved via: <http://dx.doi.org/10.1080/00033796000200059>.
17. E. J. AITON: *The celestial mechanics of Leibniz: A new interpretation*, *Annals of Science*, 20, 2, (1964), 111–123. <http://dx.doi.org/10.1080/00033796400203014>. [MR0191781 \(33 #8\)](#)
18. F. DE GANDT: *Force and Geometry in Newton's Principia*, The Princeton University Press, Princeton, NJ, (1995). [MR1347449 \(96f:01016\)](#)
19. F. DURHAM, R. D. PURRINGTON: (Eds) *Some Truer Method*, The Columbia University Press, New York, (1990).
20. F. JACQUIER: *Elementi di prospettiva, secondo i principii di Brook Taylor con varie aggiunte spettanti all'ottica e alla geometria*, Per generoso Salomoni. Roma, (1755).
21. G. W. LEIBNIZ: *Illustratio Tentaminis de Motuum Coelestium causis (in two parts)*, in *Mathematische Schriften*, 6 (Edited by Gehhardt). Georg Olms Verlag, Hildesheim-New York, (manuscript 1706, [1880], 1971), 254–276.
22. G. W. LEIBNIZ: *Sämtliche Schriften und Briefen*, herausgegeben von der Preußischen Akademie der Wissenschaften, now von der Berlin-Brandenburgischen Akademie der Wissenschaften und der Akademie der Wissenschaften in Göttingen (since 1923) VIII s.
23. G. W. LEIBNIZ: *Tentamen de Motuum Coelestium causis (Erste Bearbeitung)*, in *Mathematische Schriften*, 6 (Edited by Gehhardt). Georg Olms Verlag, Hildesheim-

- New York, ([1689], [1860], 1962), 144–161. [MR0141579 \(25 #4979e\)](#)
24. G. W. LEIBNIZ: *Tentamen de Motuum Coelestium causis (Zweite Bearbeitung)*, in *Mathematische Schriften*, 6 (Edited by Gehrardt). Georg Olms Verlag, Hildesheim-New York, (manuscript, [1860], 1962), 161–187. [MR0141579 \(25 #4979e\)](#)
 25. H. GUERLAC: *Newton on the continent*, The Cornell University Press, Ithaca-New York (1981).
 26. H. PEMBERTON: *A view of Sir Isaac Newton's Philosophy*, Palmer, London, (1728).
 27. H. PULTE - S. MANDELBROTE: (Eds) *The Reception of Isaac Newton in Europe*, Continuum, Publishing Corporation, London, (2011).
 28. I. B. COHEN - G. E. SMITH: (Eds) *The Cambridge Companion to Newton*, The Cambridge University Press, Cambridge, (2002). [MR2085873 \(2005f:01008\)](#)
 29. I. NEWTON: *Philosophiae Naturalis Principia Mathematica auctore Isaaco Newtono equite aurato. Editio ultima cui accedit analysis per quantitatum series, fluxiones ac differentiae cum enumeratione linearum tertii ordinis*, Sumptibus Societatis, Amstaelodami, (1723).
 30. I. NEWTON: *The Mathematical principles of natural philosophy*, Translated by Motte Andrew. Motte B, London, ([1726] 1729).
 31. I. NEWTON: *De gravitatione et aequipondio fluidorum*, Ms Add. 4003. Cambridge: The Cambridge University Library, (1666?). Retrieved via: <http://www.newtonproject.sussex.ac.uk/view/texts/normalized/THEM00093>.
 32. I. NEWTON: *Die mathematischen Prinzipien der Physik*, edited and translated by V. Schüller. Berlin, De Gruyter, (1999). [MR1741458 \(2001g:01017\)](#)
 33. I. NEWTON: *Philosophiae Naturalis Principia Mathematica, auctore Isaaco Newtono, Eq. Aurato. Perpetuis commentariis illustrate, communi studio pp. Thomae le Seur et Francisci Jacquier ex Gallicana Minimorum Familia, matheseos professorum. Editio nova, summa cura recensita*, A. et J. Duncan, Glasgow, ([1726] [1739–1742], 1822).
 34. I. NEWTON: *Philosophiae Naturalis Principia Mathematica. Editio secunda auctior et emendatior*, Cornelius Crownfield, Cambridge, (1713).
 35. I. NEWTON: *Philosophiae Naturalis Principia Mathematica. Editio secunda auctior et emendatior*, Sumptibus Societatis, Amsterdam, (1714).
 36. I. NEWTON: *Philosophiae Naturalis Principia Mathematica. Editio tertia aucta et emendate*, Guil. and Joh. Innys, London, (1726).
 37. I. NEWTON: *Philosophiae Naturalis Principia Mathematica*, Imprimatur S. Pepys, Reg. Soc. Preses. Julii 5. 1686. Londini, Jussi Societatus Regiae ac Typis Josephi Streater. Prostat apud plures Bibliopolas. Anno MDCLXXXVII, (1687).
 38. I. NEWTON: *Philosophiae Naturalis Principia Mathematica". The Third Edition (1726) with Variant Readings*, Assembled and edited by A. Koyré and I. B. Cohen, with the assistance of A. Whitman. Cambridge (Mass.), Harvard University Press, (1972). [MR0485110 \(58 #4966a\)](#)
 39. J. CARRIERO: *Newton on Space and Time: Comments on J.E. McGuire*, In Bricker - Hughes (Eds.) (1990), 109–133.
 40. J. CLARKE: *Demonstration of Some of the Principal Sections of Sir Isaac Newton's Principle of Natural Philosophy*, Johnson Reprint Corporation, New York, ([1730], 1972).
 41. J. E. FORCE - S. HUTTON: (Eds) *Newton and Newtonianism: New Studies*, Kluwer Academic Publishers, New York, Boston, Dordrecht, London, Moscow, (2004). [MR2105496](#)
 42. J. E. FORCE: *Some eminent Newtonians and providential geophysics at the turn of the 17th century*, *Earth Sciences History* 2, (1983), 4–10.
 43. J. KEILL: *Introductio ad veram physicam*, Sheldonian Theathre, Oxford, (1701).

44. J. L. CALANDRINI - J. A. SERRES: *Theses physico-mathematicae de aere, quibus nonnullae de usibus aeris adnexae sunt in gratiam theologiae naturalis*, Fabri et Barrillot, Genevae, (1727).
45. J. L. CALANDRINI: (1722) *Disquisitio physica de coloribus. Quam favente divina numinis aura, et sub praesidio d.d. Joh. Ant. Gautier publico doctorum examini subjiciet Joh. Ludovicus Calandrini Genevensis author & respondens*, Gabrielis de Tournes & filiorum, Genevae.
46. J. M. F. WRIGHT: *A Commentary on Newton's Principia with a supplement Volume. Designed for the students at the universities*, Tegg, London, (1833).
47. K. ASSIS: *Arguments in favour of action at a distance*, In Chaubykalo AE, Pope V, Smirnov-Rueda R. (Eds) *Instantaneous Action at a Distance in Modern Physics— "Pro" and "Contra"*. Nova Science Publishers, Commack, (1999).
48. N. GUICCIARDINI: *Analysis and synthesis in Newton's mathematical work*, In Cohen, Smith (Eds) (2002), 308–328.
49. N. GUICCIARDINI: *Did Newton use his calculus in the Principia?* *Centaurus* 40, (1998), 303–344. [MR1662055 \(99m:01012\)](#)
50. N. GUICCIARDINI: *Newton*, Carocci, Roma, (2011).
51. N. GUICCIARDINI: *Reading the Principia. The debate on Newton's mathematical methods for natural philosophy from 1687 to 1736*, The Cambridge University Press, Cambridge, (1999). [MR1725356 \(2000i:01016\)](#)
52. N. GUICCIARDINI: *The Developments of Newtonian Calculus in Britain 1700–1800*, The Cambridge University Press, Cambridge, (1989). [MR1041793 \(91e:01010\)](#)
53. N. GUICCIARDINI: *Editing Newton in Geneva and Rome: the Annotated Edition of the Principia by Calandrini, Le Seur and Jacquier*, *Annals of Science* (2014), 1–44.
54. P. BRICKER - R. I. G. HUGHES: (Eds.) *Philosophical Perspectives on Newtonian Science*, The MIT Press, Cambridge MA-London, (1990).
55. P. BUSSOTTI - R. PISANO: *On the Conceptual Frames in René Descartes' Physical Works*, *Advances in Historical Studies*, 2, 3, (2013), 106–125.
56. R. D. PURRINGTON - F. DURHAM: *Newton's Legacy*, In Durham and Purrington (1990), 1–13.
57. R. DI SALLE: *Understanding Spacetime. The philosophical development of Physics from Newton to Einstein*, The Cambridge University Press, Cambridge (2006).
58. R. PISANO - D. CAPECCHI: *Tartaglia's science weights and Mechanics in XVI century. Selection from Quesiti et inventioni diverse: Books VII—VIII*, Dordrecht, Springer, (2014-Forthcoming). cf. [MR3051364](#)
59. R. PISANO - P. BUSSOTTI: *Galileo and Kepler: On theoremata circa centrum gravitatis solidorum and mysterium cosmographicum*, *History Research*, 2, 2, (2012), 110–145.
60. R. PISANO - P. BUSSOTTI: *Notes on the concept of force in Kepler*, In R. Pisano, D. Capecci, & A. Lukešová (Eds.), *Physics, astronomy and engineering. Critical problems in the history of science and society. International 32nd Congress for the SISFA-Italian Society of Historians of Physics and Astronomy Šiauliai: The Scientia Socialis UAB & Scientific Methodical Centre Scientia Educologica Press, Lithuania* (2013), 337–344.
61. R. PISANO: *Brief history of centre of gravity theory. Epistemological notes*, *Proceedings of 2nd Proceedings of 3rd Conference of European Society for the history of science*, Krakow: Poland Academy of Science, (2007), 934–941.
62. R. PISANO: *Physics-mathematics relationship. Historical and epistemological notes*, In E. Barbin, M. Kronfellner, & C. Tzanakis (Eds.), *Proceedings of the ESU 6 European Summer University History And Epistemology in Mathematics*, Vienna: Verlag Holzhausen GmbH-Holzhausen Publishing Ltd., (2011), 457–472.

63. R. PISANO: *Reflections on the scientific conceptual streams in Leonardo da Vinci and his relationship with Luca Pacioli*, *Advances in Historical Studies*, 2, 2, (2013), 32–45.
64. R. S. WESTFALL: *The Construction of Modern Science. Mechanism and Mechanic*, Wiley & Sons Inc., New York, (1971).
65. R. T. W. ARTHUR: *Newton's Fluxions and Equably Flowing Time*, *Studies in History and Philosophy of Science* 26, (1995), 323–351. Retrieved via: [http://dx.doi.org/10.1016/0039-3681\(94\)00037-A](http://dx.doi.org/10.1016/0039-3681(94)00037-A). [MR1353905](#) ([96i:01012](#))
66. S. CHANDRASEKHAR: *Newton's Principia for the Common Reader*, The Clarendon Press, Oxford, (1995). [MR1352683](#) ([96h:01010](#))
67. T. DESAGUIERS: *Phisico-mechanical lectures. Printed for the author and sold by him*, Richard Bridger and William Vream, London (1717).
68. T. LE SEUR - F. JACQUIER - B. R. BOSCOVICH: *Riflessioni de' Padri Tommaso Le Seur, Francesco Jacquier de el' Ordine de' Minimi, e Ruggiero Giuseppe Boscovich della Compagnia di Gesù Sopra alcune difficoltà spettanti i danni, e Risarcimenti della Cupola Di S. Pietro*, Domenico Sante Santini, Roma (1743).
69. T. LE SEUR T - F. JACQUIER: *Elémens du calcul integral*, 2 Volumes. Monti, Parma, (1768).
70. W. G. HISCOCK: (Ed) *David Gregory, Isaac Newton and Their Circle. Extracts from David Gregory's Memoranda*, S.n., Oxford (1937).
71. W. J. HARPER: *Isaac Newton's Scientific Method: Turning Data into Evidence about Gravity and Cosmology*, The Oxford University Press, Oxford, (2011).
72. W. P. D. WIGHTMAN: *David's Gregory commentary on Newton's "Principia"*, *Nature*, 4556, 179, (1957), 393–394.
73. W. W. ROUSE BALL: *An Essay on Newton's Principia*, Macmillan, London, ([1893], 1972).
74. W. WHISTON: *Praelectiones astronomicae*, Charkouiae, typis Academicis, (1707).

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.