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(*b*. Norwich, England. 28 April 1773; *d*, Cambridge. England. 28 [23?] December 1827)

mathematics.

Woodhouse was a critic and reformer. The son of Robert Woodhouse, a linen draper, and of the daughter of J. Alderson, a nonconformist minister, Woodhouse attended the grammar school at North Walsham. In 1790 he was admitted to Caius College, Cambridge, and four years later graduated with the B.A., as senior wrangler and first Smith's prizeman. In 1798 he received the M.A. from the university, and was successively fellow (1798–1823), Lucasian professor of mathematics (1820–1822), and Plumian professor of astronomy and experimental philosophy (1822–1827). Woodhouse also served as the first superintendent of the astronomical observatory at Cambridge. In 1802 he was elected a fellow of the Royal Society. He married Harriet Wilkens in 1823; they had one son, Robert.

Woodhouse was primarily interested in what was then called the metaphysics of mathematics; that is, he was concerned with questions such as the proper theoretical foundations the calculus, the role of geometric and analytic methods, the importance of notation, and the nature of imaginary numbers. Many of these questions are discussed in his *Principles of Analytical Calculation* (1803), a polemic aimed primarily at the fellows and professors at Cambridge. In this work Woodhouse defended analytic methods, the differential notation, and a theory of calculus based, like that of Lagrange, on series expansions. It does not appear to have had much influence in the introduction of continental methods at Cambridge. His elementary text on trigonometry (1809), however, was widely used. George Peacock, who himself played a decisive role in the reform of mathematical studies at Cambridge, considered this work to be of major importance in achieving this goal. It was not polemical, but used analytic methods and the differential notation throughout.

Woodhouse's other writings include a history of the calculus of variations (1810), a treatise on astronomy (1812), and a work on the theory of gravitation, somewhat misnamed *Physical Astronomy* (1818). In all these works Woodhouse presented the resultsof continental research from the time of Newton up to his own time.

BIBLIOGRAPHY

I. Original Works. Woodhouse's papers include "On the Necessary Truth of Certain Conclusions Obtained by Means of Imaginary Quantities," in *Philosophical Transactions of the Royal Society*, **91** (1801). 89–119; and "On the Independence of the Analytical and Geometrical Methods of Investigation; and on the Advantages To Be Derived From Their Separation," *ibid*., **92** (1809), 85–125. His books are *Principles of Analytical Calculation* (Cambridge, 1803); *A Treatise on Plane and Spherical Trigonometry* (Cambridge, 1809; 5th rev. ed., 1827); *A Treatise on Isoperimetrical Problems and the Calculus of Variations* (Cambridge, 1810), reprinted as *A History of the Calculus of Variations in the Eighteenth Century*(New York, n.d.); *Treatise on Astronomy*(Cambridge,1812); and *Physical Astronomy* (Cambridge, 1818).

II. Secondary Literature.The fullest account of Woodhouse's life and work is in Augustus DeMorgan, "Robert Woodhouse," in *Penny Cyclopaedia* XXVII (London, 1843), 526–527. Woodhouse's influence is considered in Elaine Koppelman, *Calculus of Operations; French Influence in British Mathematics in the First Half of the Nineteenth Century* (Ph. D. dies., Johns Hopkins University. 1969).

Elaine Koppelman