

Biographical Encyclopedia of Astronomers

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Lepaute, Nicole-Reine

Born Paris, France, 5 January 1723

Died Saint-Cloud near Paris, France, 6 December 1788

Nicole Lepaute participated with Joseph-Jérôme Lalande and Alexis-Claude Clairaut in their calculations relating to comet P1/Halley. She also calculated solar eclipses and astronomical ephemerides. She is among the few women whose active participation in 18th-century science has been recognized. Lalande, in his *History of Astronomy*, paid tribute to her.

Nicole Reine Étable de la Brière was born in the Palais de Luxembourg, where her father was in service to the Queen of Spain, Elisabeth d'Orléans. In her childhood, she was recognized for her intelligence, love for and interest in books, and for her social gifts. Lepaute was fond of mathematics. On 27 August 1748, she married Jean André Lepaute, who later became the royal clockmaker

From 1753, Jérôme Lalande had his observatory located at the main entrance to the Palais de Luxembourg; he had taken it over from Joseph Delisle when the latter moved to Saint Petersburg. Given the proximity of the observatory to Lepaute's residence, she and Lalande soon became acquainted. He reports that she observed and contributed to discussions and calculations. She also assisted her husband in producing tables of the number of oscillations per unit time for pendulums of different lengths. These results were included in the supplement to the *Traité d'horlogerie* published under her husband's name in 1760

In the 1750s, the astronomical community was very interested in the return of the comet that Edmund Halley had predicted would return in 1758. In 1757, Lalande invited Alexis-Claude Clairaut to estimate the gravitational effects due to Jupiter and Saturn on the comet's orbit and to make a precise prediction for the date of its return. He also suggested that Lepaute might participate in the calculations. They calculated both the distance and the force due to each of the two perturbing planets for every degree along the comet's orbit for a 150-year period. In November 1758, some short delay in the comet's return could be announced to the academy.

In 1762, Lepaute was also involved in the calculations of the path and circumstances of an annular eclipse that was to occur on 1 April 1764. Many visibility shadow tracks for Europe and for Paris, with the time and percentage of the eclipse, were published and distributed to the public. Lepaute contributed to the annual *Connaissance des temps*, for which Lalande was in charge; also for Lalande, she took an active part in computing ephemerides for Volume 8 (1784–1792) and, on her own, undertook the calculations for the first two years of Volume 9 (for 1793–1800) of the decennial publication *Ephémérides des mouvements célestes*, which Lalande edited from 1775

Lepaute was a member of the Académie royale des sciences de Béziers, to which she presented calculations relating to observations made during the 1761 transit of Venus. Lalande reported

that Lepaute's incessant calculations affected her eyesight, forcing her to abandon her scientific activities prematurely. Lepaute and her ailing husband moved to Saint-Cloud, where she died just four months before him. They had no children, but she cared for children from his family, introducing her nephew Joseph Lepaute Dagelet to astronomy. He became a member of the Royal Academy of Sciences in 1785 but died in the wreck of the ship *La Pérouse*

Lalande paid tribute to Lepaute's talent and courage as she undertook the main part in the very laborious computations. According to Lalande, Clairaut did the same but, for personal reasons, removed the words of acknowledgment from his work. According to Clairaut, Lepaute was *la savante calculatrice*.

Monique Gros

Alternate name

Étable de la Brière, Nicole-Reine

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