

FREDERIK KAISER
1808-1872

Kaiser was born in Amsterdam, on 10 June 1808. His father, Johann Wilhelm Kaiser had come to the Netherlands from Germany and taught German in Amsterdam. His mother was the former Anna Sibella Liernur. The son was baptized *Friedrich* but preferred the Dutch rendering, *Frederik*. When he was eight years old, his father died, and Frederik's education was taken over by his uncle, Johan Frederik Keyser, a 'useful' mathematician and mathematical astronomer. When his uncle died, Frederik was fourteen, and he had already made somewhat of a name for himself by publishing a calculation of an occultation of the Pleiades by the Moon in the *Algemeene Konst- en Letterbode*. This publication brought him to the attention of Gerard Moll, the professor of physics and astronomy at the University of Utrecht. Thanks to Moll, Kaiser obtained an appointment as observer at the Leiden Observatory just before his eighteenth birthday, in 1826. He remained at the observatory for his entire career.

The observatory, built on the roof of the academic building, was not suited for precision observations: the equipment was obsolete, the structure was subject to vibrations, and the director, Pieter Johannes Uyenbroek, was not much interested in astronomical observation. Kaiser could, therefore, do little useful observational work. He followed lecture courses at the university, and in 1831 obtained his *candidaats* (Bachelor's). In that year he married Aletta Rebecca Maria Barkley (d. 1872), who bore a daughter and four sons (one of whom died in infancy).

Kaiser's first achievement, then, was not as an observer but rather as a mathematical astronomer. In anticipation of the return of Halley's Comet scheduled for 1835, he calculated the perturbations on the planet's path more accurately and was able to correct the predicted time of the comet's perihelion. Observing with a borrowed telescope in the attic of his house, he found the comet in the place he had predicted. As a result of this work, Kaiser was awarded an honorary doctorate by the university in 1836 and was appointed lecturer in astronomy and director of the observatory in 1837, at the age of 29. He was appointed professor extraordinarius in 1840, and ordinarius in 1845.

As director, Kaiser's first project was to make the observatory as free from vibrations as possible by an ingenious system of supports.

He then installed a small but excellent telescope. With this instrument, he concentrated on the measurements of stellar positions and their corrections, and when he published the first installment, in 1840, Leiden began to be recognized as a center of precision astronomy. The building and equipment were, however, not good enough to compete, and after a lengthy campaign before the States-General, funds were raised by public subscription, and in 1860 construction of a new, freestanding observatory was begun. By 1861, the major instruments, including a state-of-the-art meridian circle, had been installed and Kaiser's mature program of precision astronomy could begin. The results were published in the Observatory's new serial *Annalen der Sternwarte in Leiden*, beginning in 1868.

Kaiser advised the Dutch government on the geodetic survey of the Dutch East Indies, and played an important role in the Commission for the Triangulation of Europe (1864-1871). He observed Mars during the oppositions of 1862 and 1864 as well as the comets of 1861 and 1864. Kaiser was a spell-binding lecturer, and his university courses drew large numbers of students. He was also an excellent popular writer who through his works helped stimulate interest in astronomy in the Netherlands. *De Sterrenhemel* (2 vols, Amsterdam, 1843-1844) went through a number of Dutch and translated editions. He died in Leiden on 28 July 1872.

Primary works

Poggendorff, vol. 1, 1220-1221; vol. 3, 706. *Verhandelingen over de komeet van Halley* (The Hague, 1835); *Het Observatorium te Leiden* (Leiden, 1838); *De komeet van Encke en hare naderende verschijning* (Leiden, 1838); *De Sterrenhemel*, 2 vols (Amsterdam, 1844-45), and many reprints (see also *De Sterrehemel verklaard*); *De inrigting der Sterrewachten, beschreven naar de Sterrewacht op den heuvel Pulkowa en het onderwerp eener Sterrewacht voor de Hoogeschool te Leiden* (Leiden, 1854); *De geschiedenis der ontdekkingen van planeten* (Amsterdam, 1851); *De sterrekundige plaatsbepaling van den Indische archipel* (Amsterdam, 1851); *Populair Sterrekundig Jaarboek* (Amsterdam, 1845-1863); *Eerste onderzoekingen met de mikrometer van Airy, volbragt op het observatorium der hoogeschool te Leiden* (Amsterdam, 1857); *De eischen der medewerking aan de ontworpen graadmeting in Midden-Europa, voor het Koninkrijk der Nederlanden, toegelicht door F. Kaiser en L. Cohen Stuart* (Amsterdam, 1864); *Eenige opmerkingen omtrent de periodieke fouten van*

mikrometer-schroeven, naar aanleiding van de jongste onderzoeken aan de Sterrewacht te Leiden (Amsterdam, 1866); *Rapport omtrent de tweede algemeene bijeenkomst der gemagtigden voor de graadmeting van Europa* (Amsterdam, 1867); *Geschichte und Beschreibung der Sternwarte in Leiden* (Haarlem, 1868); *Annalen der Sternwarte in Leiden*, vol. 1 (1868), vol. 2 (1870), vol. 3 (1872).

Secondary sources

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M.J.G. Minnaert, in: *DSB*, vol. 7, 209-210; H.G. van de Sande Bak-huyzen, in: *NNBW*, vol. 1, 1239-1240.

[A.v.H.]