

# Biographical Encyclopedia of Astronomers

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Henderson, Thomas

Born Dundee, Scotland, 28 December 1798

Died Edinburgh, Scotland, 23 November 1844

Thomas Henderson, who served as Astronomer Royal for Scotland, was one of the first British astronomers to employ rigorous statistical methods in the analysis of observational data. He also performed the second known parallax measurement of a star ( $\alpha$  Centauri).

Henderson was the youngest of five children born to a tradesman. He married in 1836 and had one daughter. Henderson was educated at the Dundee Academy. He showed such proficiency in mathematics that the headmaster gave him private instruction on the subject. At age 15, Henderson began a six-year apprenticeship to a lawyer in Dundee. He moved to Edinburgh in 1819, where he pursued a legal career while serving as clerk to Lord Eldin, Chief Justice of Scotland's Supreme Court, and later as private secretary to the Earl of Lauderdale and Lord Advocate Jeffrey. Simultaneously, Henderson took up astronomy as a hobby, acquiring practical skills at Calton Hill Observatory, operated by the private Astronomical Institution of Edinburgh

Henderson burst into the astronomical spotlight during a creative spurt in the mid-1820s, when 12 of his papers were published in the *Quarterly Journal of Science* over a span of 3 years. Another paper, on the longitude difference between Greenwich and Paris, appeared in the *Philosophical Transactions of the Royal Society* in 1827. His new method of predicting the occurrences of lunar occultations was adopted for the 1827–1831 editions of the *Nautical Almanac*. During business trips to London, Henderson forged connections with noted British astronomers such as John Herschel, George Airy, and James South, who allowed him access to his own well-equipped observatory at Camden Hill

In 1832, Henderson became director of the Royal Observatory at the Cape of Good Hope, following the premature death of its predecessor, the Reverend Fearon Fallows. Henderson accepted the Cape position with great reluctance, having been turned down for both the chair of practical astronomy at Edinburgh University and the position of superintendent of the *Nautical Almanac*. In his private correspondence, Henderson referred to his remote posting as the "Dismal Swamp." In 1833, Henderson wrote a detailed memorandum to the Admiralty, in which he pointed out deficiencies of the Royal Observatory, arguing in the following manner:

"[I]ts situation upon the verge of an extensive sandy desert [left it]

Exposed to the utmost violence of the gales which frequently blow, without the least protection from trees or other objects... the need for good water, and the state of the bulk of the population... will always prove considerable drawbacks compared to the comforts of persons sent from England to perform the duties of the observatory...."

His pleas for increased financial support went unheeded.

Saddled with a weak constitution and incipient heart disease, and disappointed by the observatory's mediocre equipment, Henderson remained in South Africa for only one year before returning to Scotland in May 1833. Nevertheless, his accomplishments at the Cape were impressive by any measure. He determined the precise latitude and longitude of the observatory; measured the parallaxes of the Moon and Mars, and from the latter inferred the Sun's distance; tracked the paths of comets 2P/Encke and 3D/Biela; recorded eclipses of Jupiter's satellites and occultations of stars by the Moon; timed a transit of Mercury across the face of the Sun; and dramatically accelerated the program to chart the Southern Hemisphere sky

In 1834, after his return from the Cape, Henderson was appointed Astronomer Royal for Scotland and Regius Professor at the University of Edinburgh, a dual post that included the directorship of the Calton Hill Observatory. Over the next decade, in addition to reducing the Cape data, he secured some 60,000 positional measurements of Northern Hemisphere stars. Henderson is best known for obtaining the second reliable parallax measurement of a star, Centauri. He recorded the relevant positional data while in residence at the Cape, but announced the resultant parallax, namely  $1.16 \pm 0.11''$ , before the Royal Astronomical Society only years later in January 1839, two months after Friedrich Bessel published his own parallax measurement of the star 61 Cygni. Shortly afterward, Henderson reported a preliminary parallax for the star Sirius. He died of heart disease.

*Alan W. Hirshfeld*

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