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## Henderson, Thomas

(b. Dundee, Scotland. 28 December 1798; d. Edinburgh, Scotland. 23 November 1844)

*astronomy.*

Thomas Henderson was the youngest of five children of a tradesman. Educated in Dundee, he was taught mathematics by the principal of the Dundee Academy, who had a high opinion of his abilities. In 1813 he began work in the local records office. In 1819 he moved to Edinburgh, where until 1831 he continued to follow a legal career and acted as secretary to the earl of Lauderdale and Lord Jeffrey.

Most of Henderson's astronomical work was done in his spare time. At Dundee he had met Sir [John Leslie](#), William Wallace, and Basil Hall, a naval captain and well-known writer of travel books. In Edinburgh he joined the Astronomical Institution and used its Calton Hill observatory. His eyesight was very poor, but he excelled both in the practice and development of new methods of computation. His first important paper, concerning a new method of calculating occultations, was included in [Thomas Young's](#) *Nautical Almanac* from 1827 to 1831 and was also published in the *Quarterly Journal of Science*,<sup>1</sup> to which Henderson contributed twelve papers during the next three years.

Henderson annually visited London on business for the earl of Lauderdale. There he met many astronomers, including Sir James South, who gave him the use of his fine Camden Hill observatory. In 1827 Henderson contributed a paper to the *Philosophical Transactions of the Royal Society* on the difference in longitudes between Paris and Greenwich, and in 1830 he earned a vote of thanks from the Astronomical Society for some calculations he had done for Sir James Ross's forthcoming Arctic expedition. Through such work Henderson's name became widely known in astronomical circles. Young supported him as successor to [Robert Blair](#) in the Edinburgh chair of practical astronomy, but John Pond was elected. In 1831, however, Henderson was elected successor to Fearon Fallows as royal astronomer at the [Cape of Good Hope](#). He resigned this post in May 1833 because of ill health and returned to Edinburgh, where in October 1834 he was more or less simultaneously made first astronomer royal for Scotland, professor of practical astronomy in the university, and director of the Calton Hill observatory.

In 1836 Henderson married the daughter of the instrument maker Alexander Adie. She died in 1842, shortly after the birth of their only child, a daughter. Henderson died of a [heart disease](#) two years later.

Henderson did not often lecture, and poor health prevented him from being a great astronomical observer, an unfortunate loss, because his computational skills were worthy of better data than he was generally able to obtain. At the Cape his instruments were not particularly impressive, comprising chiefly a ten-foot transit manufactured by the Dollond company, and a poor mural circle made by the firm of W & S Jones.<sup>2</sup> He had only one assistant, a Lieutenant Meadows. Working under great difficulties, they observed the transit of several thousand southern stars. Henderson did not reduce his observations until after his return to Edinburgh, and a select catalogue of declinations<sup>3</sup> and right ascensions<sup>4</sup> included only 172 stars.

Among his other observations at the Cape were those of Encke's and Biela's comets,<sup>5</sup> a transit of Mercury, many occultations of stars, and eclipses of Jupiter's satellites. He also observed Mars and the moon, with a view to deducing solar and lunar parallaxes, and he computed several planetary orbits.

From observations at Greenwich, Cambridge, Altona, and the Cape at the opposition of Mars (November 1832), Henderson deduced a solar parallax of 9.125''<sup>6</sup> this figure was not as good as Delambre's or Thomas Hornsby's values, but of course it was appreciated that the Mars method was inferior to that using Venus. (Cf. the currently accepted solar parallax of 8.80''.) From simultaneous lunar observations at Greenwich, Cambridge, and the Cape, he deduced a lunar equatorial horizontal parallax of 57'1.8''.<sup>7</sup> Of the many determinations made in the early century, this figure was marginally better than the others.

Henderson's most memorable findings, however, related to the annual parallax of the bright doublet  $\alpha$  Centauri (the third brightest star). He announced to the Royal Astronomical Society in January 1839 that declination measurements made at the Cape and reduced at Edinburgh had shown a parallax of 1.16'',<sup>8</sup> a figure about a quarter greater than the accepted value. It is not clear why Henderson withheld the announcement of the measurement for so long or at precisely what stage he recognized a parallactic movement. His interest in the star had been aroused because it possessed an unusually large [proper motion](#). His delay cost him priority. F. W. Bessel announced the much smaller parallax of  $\alpha$  Cygni two months earlier, while F. G. W. Struve in Dorpat announced the parallax of  $\gamma$  Lyrae (Vega).

## NOTES

1. **18** (1825). 343–347.

2. *Memoirs of the Royal Astronomical Society*, **8** (1835), 141–168 and *passim*, contains ten papers by Henderson.

3. *Loc. cit.* and **10** (1838), 49–90.

4. *Ibid.*, **15** (1846), 129–146.

5. *Ibid.*, **8** (1835), 240–243; and *Philosophical Transactions of the Royal Society*, **123** (1833), 549–558.

6. *Memoirs of the Royal Astronomical Society*, **8** (1835), 95–104.

7. *Monthly Notices of the Royal Astronomical Society*, **4** (1836–1839), 92–94.

8. *Memoirs of tin-Royal Astronomical Society*, **11** (1840), 61–68.

## BIBLIOGRAPHY

I. Original Works. Apart from works cited in the notes and a number of smaller communications in the journals mentioned, Henderson published five vols, of *Edinburgh Observations* (Edinburgh, 1838–1843), and seven more were published by his successor, Charles Piazzzi Smyth (Edinburgh, 1847–1863). Reductions of his Cape observations were incomplete at his death and were never published together in one separate work. He supervised the reduction of the data for the British Association's publication of *Lacaille's Catalogue of Southern Stars* (London, 1847) but died before it was completed; John F. W. Herschel wrote the pref. For a more complete list of Henderson's many papers and shorter notes, see the Royal Society *Catalogue of Scientific Papers*, III (London, 1869), 273–275; and the obituary notice in *Memoirs of the Royal Astronomical Society* (see below, pp. 392–395).

II. Secondary works. For sketches of Henderson's life and work, see the obituaries in *Philosophical Magazine*, 3rd ser., 27 (1844), 60–79; *Memoirs of the Royal Astronomical Society*, 15 (1844), 368–395; *Proceedings of the Royal Society*, 5 (1844), 530–532; and Philip Kelland, *proceedings of the Royal Society of Edinburgh*, 2 (1846). 35. See also Agnes Clerke's excellent art. in *Dictionary of National Biography*, new ed., IV, 404–406. For the state of positional astronomy in Henderson's time and in relation to him, see R. Grant, *History of Physical Astronomy* (London, 1852), esp. pp. 212, 228, 551.

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