

[encyclopedia.com](https://www.encyclopedia.com)

Winlock, Joseph | Encyclopedia.com

Complete Dictionary of Scientific Biography

5–6 minutes

WINLOCK, JOSEPH

(b. Shelby County, Kentucky, 6 February 1826; d. Cambridge, Massachusetts, 11 June 1875)

astronomy, mathematics.

Immediately upon graduation from Shelby College in 1845, Winlock was appointed professor of mathematics and astronomy in that school. At the meeting in 1851 of the [American Association for the Advancement of Science](#), Winlock met [Benjamin Peirce](#); thenceforth he was esteemed and promoted by the scientific lazzaroni. In 1852 he moved to Cambridge, as a computer for the *American Ephemeris and Nautical Almanac*. Using the refracting telescope from Shelby set up in the Cloverden Observatory in Cambridge, Winlock and B. A. Gould made astronomical observations. In 1857 Winlock was appointed professor of mathematics at the U. S. Naval Observatory. The following year he was promoted to superintendent of the Nautical Almanac office, which position he resigned in 1859 to take charge of the mathematics department of the U. S. Naval Academy. Following the outbreak of the [Civil War](#), Winlock again took superintendence of the Nautical Almanac. In 1863 he was made an original member of the [National Academy of Sciences](#). In 1866, backed by the “Coast Survey Clique,” he was appointed Phillips professor of astronomy and director of the Harvard College Observatory. In 1871 the professorship of geodesy in the Lawrence Scientific School was added to his duties.

While at Harvard, Winlock's primary concern was to develop and obtain more accurate and efficient instruments. In this he was quite successful. Had he lived longer he would probably have used them to even better advantage than he did. Troughton & Simms, after extensive collaboration with Winlock, supplied a large and improved meridian circle. With this the Harvard zone of stars for the *Astronomische Gesellschaft* was determined; after Winlock's death the observations were continued by William A. Rogers, and the computations by Winlock's oldest daughter, Anna.

Among Winlock's several contributions to solar photography was the development of fixed-horizon long-focus refracting telescopes. One of these instruments, installed at Harvard in 1870, took daily pictures of the sun. Similar telescopes were used by the eight U.S. government-sponsored expeditions to record the 1874 transit of Venus. Also worthy of mention are Winlock's particularly detailed photographs of the solar corona during the eclipse of 1869. Celestial spectroscopy also received Winlock's attention, and he obtained several fine spectroscopes for the observatory. To take the fullest possible advantage offered by the 1870 solar eclipse, Winlock devised a mechanical method of recording the positions of spectral lines. Throughout his tenure at Harvard he collaborated with the Coast Survey on both astronomical and geographical projects.

BIBLIOGRAPHY

The [Royal Society](#) of London, *Catalogue of Scientific Papers*, Poggendorff, and the *Bibliographie Générale de l'Astronomie* list about two dozen Winlock papers. Winlock's influence as an astronomer, both his own work and the work he inspired in others, is best seen in the *Annals* of the Harvard College Observatory. Vols. **5,6,7**, published by Winlock, contain work done by his predecessors, W. C. Bond and G. P. Bond. Published after Winlock's death, vol. **8**, pt. 1, "Historical Account of the Astronomical Observatory of Harvard College," details the instrumental additions and improvements engineered by Winlock; pt. 2 contains "Astronomical Engravings of the moon, Planets, etc.; Prepared [by L. Trouvelot] at the Astronomical Observatory of Harvard college Under the Direction of the

Late Joseph Winlock, A.M.” Vol. **9** contains C. S. Peirce’s photometrical researches, also supported by Winlock. Vols. **10,12,14,16,25,35** , and **36** contain astrometric catalogs prepared by William A. Rogers under the direction of Winlock and his successor, E. C. Pickering (in many cases these observations had been begun by Winlock). Vol. **13** contains micrometric observations from 1866 to 1881, made under, and in some cases by, Winlock and Pickering.

The most extensive obituary is in *Proceedings of the [American Academy of Arts and Sciences](#)*,**11** (1875– 1876), 339–350, republished verbatim in *Biographical Memoirs of the [National Academy of Sciences](#)*,**1** (Washington, D.C., 1875). See also *Nature*,**12** (1875), 191–192; *American Journal of Science*,**10** (1875), 159–160 (quoted in *Scientific American*);*Dictionary of American Biography*, XX ([New York](#), 1936); and the various published histories of the Harvard College Observatory.

Deborah Jean Warner