



Heartland Science

Ohio's Legacy of Discovery & Innovation



Medicine, Health & Science

From the Heimlich Maneuver
to the Speed of Light

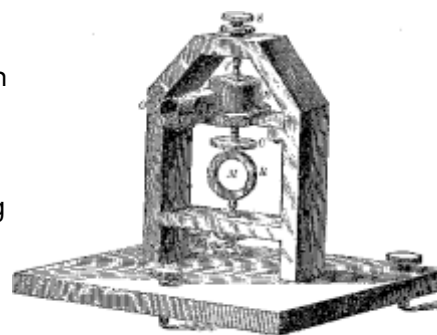
Michelson-Morley Experiment

Albert Abraham Michelson (1852-1931) was the first American to win the Nobel Prize in physics in 1907. His experiment disproved the notion that space is filled with ether. Michelson was born in Stzelno, Poland and graduated from the U.S. Naval Academy at Annapolis (1873).



Michelson also was an instructor at the U.S. Naval Academy. In 1877, as part of a class demonstration, Michelson conducted his first velocity of light experiments. He made an important modification of a previously popular method for determining the velocity of light - he used a revolving mirror. He later served as Professor of physics at the Case School of Applied Science in Cleveland from 1883 to 1889.

While in Cleveland, Michelson built an interferometer (a device designed to split a beam of light in two and bring the two beams back together again) and collaborated with chemist Edward William Morley (1838-1923) of Western Reserve University (1869-1906) to conduct experiments that showed the speed of light was unaffected by movements of the earth through space (1887), disproving the "space ether concept" and paving the way for Albert Einstein's Theory of Relativity (1905).



Design for Revolving Mirror

The pioneering work performed by this pair has come to be known as the Michelson-Morley experiments. Michelson was also the first scientist to accurately determine the speed of light (299,792 km/sec).

Michelson served as President of the National Academy of Sciences from 1923 to 1927. Morley's later research dealt with the density and weight of gases, which resulted in his definitive chemical method of determining atomic weights.

Throughout his life, Michelson was known as a person who loved education, and who inspired others who would themselves emerge into inspiring teachers, physicists, and inventors.

Did You Know?

- The works of Albert Abraham Michaelson are freely available in electronic form from Project Gutenberg: [Experimental Determination of the Velocity of Light](http://www.gutenberg.net/browse/BIBREC/BR11753.HTM) (www.gutenberg.net/browse/BIBREC/BR11753.HTM)

Find out more...

- [View an animation of the Michelson-Morley Experiment](http://galileoand爱因斯坦.physics.virginia.edu/more_stuff/flashlets/mmexpt6.htm)
(http://galileoand爱因斯坦.physics.virginia.edu/more_stuff/flashlets/mmexpt6.htm)
- [Albert Abraham Michelson Biography - Adam Mickiewicz University](http://www.staff.amu.edu.pl/~zbow/ph/sci/aam.htm)
(www.staff.amu.edu.pl/~zbow/ph/sci/aam.htm)
- [Interferometry](http://en.wikipedia.org/wiki/Interferometer)
(<http://en.wikipedia.org/wiki/Interferometer>)
- [U.S. Naval Academy Library Profile of Michelson](http://www.nadn.navy.mil/LibExhibits/Michelson/Michelson_career.html)
(www.nadn.navy.mil/LibExhibits/Michelson/Michelson_career.html)