

Anders Jonas Angström 1814 - 1874

For the purpose of measuring very short lengths, such as those of light, the unit 'Angström' was introduced. One Angstrom (A) is equal to one hundred-millionth part of a centimetre. It is named in honour of the 19th-century physicist Anders Angstrom who, with Kirchhoff, founded modern spectroscopy.

Spectroscopy is the method of investigating matter by the registration and analysis of spectral lines of light emitted from a substance when it is heated.

Ångström was born at Medelpad, Sweden, in 1814, the son of a chaplain. He was educated at the University of Uppsala, obtaining his doctorate in 1839. After graduating from the University, Angstrom worked for a while at Uppsala Observatory as an observer. Later, he was appointed to the chair of physics at the University of Uppsala.

Ångström's first investigation was into the conduction of heat. He also measured atomic spectra, particularly those produced by electric arcs, where lines in the spectrum due to both electrode and gas were noted. His main achievement was that he was one of the first to understand that a hot gas emits light at the same wavelength as it absorbs it when it is cooled. Angström was so interested in spectral analysis that he devoted the rest of his career to this problem.

He examined the lines in the spectrum from powerful electric arcs





The connection between absorption and emission spectra has been much used in astronomy, since spectra from heavenly bodies can indicate the elements present.

In 1861-1862 Ångström investigated the spectrum of the Sun, and he announced that hydrogen was present there.

In 1868 he published his 'Researches on the Solar System', a famous work in which he presented measurements of more than 100 lines. He also published his map of the normal solar spectrum, which remained a standard reference work for nearly twenty years. Angstrom was the first to examine the spectrum of the aurora borealis.

Despite the importance of his work he was not immediately recognized either abroad nor even in his own country. In part it was probably because he was a very modest and reserved person. But eventually his works were valued. He became a member of the Stockholm and Uppsala Academies, and in 1870 he was made a Fellow of the Royal Society of London from which he received the Rumford Medal in 1872.



He studied the light from the Sun in great detail