Pieter Zeeman 1902 physics Nobel prize

Pieter Zeeman was born in Zonnemaire a small town on the island of Schouwen-Duiveland Netherlands. He was interested in physics at an early age. In 1883, the Aurora borealis was visible in the Netherlands. Zeeman, was a student of the high school in Zierikzee made a drawing and description of the Aurora borealis and sent it to Nature where it was published. After finishing high school in 1883 he went to delft for supplementary education. While in Delft he met Heike Kamerlingh Onnes, who would become his thesis advisor.

The zeeman effect in physics and astronomy is the splitting of a spectral line into two or more components of slightly different frequency when the light source is placed in a magnetic field. It was first observed in 1896 as a broadening of the yellow D-lines of sodium in a flame held between strong magnetic poles. Later the broadening was found to be a splitting of spectral lines into as many as 15 components.

Zeeman's discovery earned him the 1902 Nobel Prize for Physics which he shared with another Dutch physicist. "Lorentz, who had earlier developed a theory concerning the effect of magnetism on light, hypothesized that the oscillations of electrons inside an atom produce light and that a magnetic field would affect the oscillations and thereby the frequency of the light emitted."(physicsencyclopedia) This theory was confirmed by Zeeman's research.

The zeeman effect has helped physicists determine the energy levels in atoms and identify them in terms of angular momenta. It also provides a way of studying atomic nuclei and electron paramagnetic resonance. In astronomy the Zeeman effect is used in measuring the magnetic field of the Sun and of other stars.

Zeeman had many other accomplishments in his fruitful carrer. In 1898 Zeeman was elected member of the Royal Netherlands Academy of Arts and Sciences in Amsterdam and he served as its secretary from 1912 to 1920. He won the Henry Draper Medal in 1921, and several other awards and Honorary degrees.

Zeeman was the second Nobel prize winner and will undoubtedly go down in history. He die on october 9 1943. The Zeeman laboratory was build in Amsterdam where Zeeman was the Professor and director of physics. For the remainder of his career studied Magneto-optics.