

Newton Maxwell Einstein

James Clerk Maxwell (1831–1879) is now recognised as being one of three most important physicists of an era that spanned some 300 years, beginning with Isaac Newton and closing with Albert Einstein.

Newton, renowned for the law of gravity, also established the laws of mechanics and optics and the crucial branch of mathematics called calculus. Around 250 years later, Einstein took science into a new age with his theories of special and general relativity, in the process rewriting Newton's long established principles of how the world worked. Although Maxwell was born in an era when no-one doubted the veracity of Newton's laws, his particular contribution to the course of events was his formulation, in 1865, of the electromagnetic equations that now bear his name. In Einstein's view, these equations were pivotal to the development of his own theory, first published in 1905.



Maxwell's statue in George Street, Edinburgh. He holds a colour wheel and his dog Toby lies below.



School of Newton



School of Einstein

The plinth of the statue incorporates two friezes which depict how his contribution to science relates to the work of Newton and Einstein.

The School of Newton depicts a beam of white light passing through two prisms and projecting onto the ground. The prism on the left splits the incoming light into its spectrum of constituent colours, whereas no new colours are produced by the second prism, as indicated by the pointing hand.

The second frieze conveys the relativistic distortion of space-time by the great mass of the Sun, resulting in the gravitational bending of rays of light.

Einstein described Maxwell as the "*most profound and the most fruitful individual that physics has experienced since Newton*" in recognition of which he had a photograph of Maxwell prominently placed in his Princeton study. Asked if he "*stood on the shoulders of Newton*", Einstein replied "*I stood on the shoulders of Maxwell*".

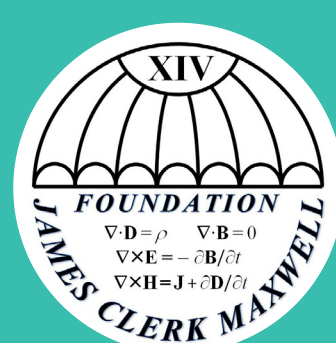


Einstein in his Princeton study with the permission of Drew University and the Shelby White and Leon Levy Archives Center, Institute for Advanced Study, Princeton, NJ, USA.

Maxwell is further commemorated by the great Nobel Prize winning physicist Richard Feynman who said of him "*there can be little doubt that the most significant event of the 19th century will be judged as Maxwell's discovery of the laws of electrodynamics*"



From the cartoon by Ohta Koichi representing Einstein's tribute to Maxwell



This panel is sponsored by
**The School of Physics and Astronomy at
The University of Edinburgh.**

