

## THE UNKNOWN WORLD OF PHYSICS

It all started with “packages”. In 1905, German Physicist Max Planck published the groundbreaking study of the effect of radiation on a “blackbody” substance, that groundbreaking article that was the first step in the journey to the quantum universe. So what was this article talking about? In his writings, Planck showed with his experiments that energies provide us with information about the properties of matter in certain situations. According to classical physics, energy was only a continuous phenomenon, independent of the properties of physical matter. Planck's theory argued that radiant energy consists of particle-like components known as "quanta". The theory helped unravel previously unexplained natural phenomena, such as the behavior of heat in solids and the nature of light absorption at the atomic level. This basic but not detailed article has led to the work of important scientists in the field of quantum, such as Einstein, Bohr, Schrödinger, and De Broglie. Their work also made possible the development of quantum mechanics, a mathematical application of quantum theory, which argues that energy is both matter and waves depending on certain variables. Quantum mechanics therefore takes a probabilistic view of nature, in sharp contrast to classical mechanics, in which all the exact properties of objects are in principle computable.

Today, the combination of quantum mechanics with Einstein's theory of relativity is the foundation of modern physics. The equations that De Broglie, who came after Einstein, put forward to explain wave-particle duality, Niels Bohr's questioning of teleportation by putting forward quantum entanglement, the metaphor we use to determine the location of a particle with Schrödinger's cat, serve to explain current events. Everything starts with the existence of light in packets, called quanta, and is a huge pool of information that disproves our assumptions about the formation and functioning of the universe. As impossible as it is to understand what's going on, it's to be commended for the effort quantum physicists have put into the explanation of phenomenons. These scientists and quantum actually give us a very important message. They've taught us for too long that foundations we're absolutely sure of can be wrong and that questioning is more important than knowing. As Richard Feynman said “ I would rather have questions that can't be answered than answers that can't be questioned.”

