

NOBEL PRIZE IN PHYSICS 2015

The Nobel Prize in Physics 2015 was awarded to **Takaaki Kajita** and **Arthur B. McDonald** for discovery of neutrino oscillations, which shows neutrinos have mass.

WHAT IS A NEUTRINO?

Neutrinos are tiny subatomic particles, produced by nuclear reactions that take place in stars, including our sun, as well as in radioactive decay processes. They come in three 'flavours'.



ELECTRON NEUTRINO



MUON NEUTRINO



TAU NEUTRINO



NOBEL PRIZE



The nuclear reactions in the sun produce neutrinos, which we can detect.

The number of neutrinos detected was only a third of the expected value.

Neutrinos 'flip' between the three flavours, and only one type was being detected.

WHY DOES IT MATTER?

If neutrinos oscillate between types, they must have mass, even if this mass is incredibly small. This contradicts the standard model of particle physics, which states they are massless.

