In recent years astronomical observations have revealed that the expansion of the Universe is accelerating. This requires the existence of a constant or nearly constant energy density. This so-called Dark Energy is also measured in a detailed analysis of the anisotropies of the Cosmic Microwave Background. In many respects this quantity is still quite mysterious. In addition there exists also Dark Matter, and overall the known baryonic matter comprises only 5 percent of the total, 95 percent is unknown. In the talk the observations leading to these strange conclusions will be discussed, as well as some ideas for explaining them.