

# White dwarf and ultra-cool dwarf keep their distance

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Scientists from the University of Hertfordshire have discovered a rare binary system consisting of a white dwarf, a Sun-like star that has reached the end of its life, and an ultra-cool dwarf, which is the smallest kind of star. To make the discovery even more unusual, the co-orbiting pair has by far the widest separation ever detected in this type of binary system.

Avril Day-Jones, who is presenting results at the RAS National Astronomy Meeting in Preston, said, “This is a record breaking discovery for a system of this kind. In the other few binary cases that are known, the objects are relatively close together. In this new system, the objects are 600 billion kilometres apart which is hundreds of times wider.”

The group from Hertfordshire believes that the two objects formed at roughly the same time and were originally much closer together. During the death-throes of the white dwarf’s progenitor star, forces induced when gas and dust from the star were thrown off into space caused the ultra-cool dwarf spiral out to its remote position.

Miss Day-Jones said, “Ultra-cool dwarfs are elusive objects and we don’t know that much about them. This type of binary allows us to use our knowledge of white dwarfs, which we understand quite well, to infer properties of the ultra-cool dwarf, such as the temperature, surface gravity, mass and age. We need to discover more of this type of binary system if we want to improve our understanding of ultra-cool dwarfs.”

Source: RAS

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