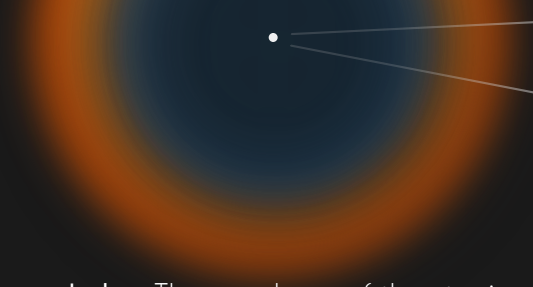
WHAT'S A... WHITE DWARF?

A WHITE DWARF is the burnt out core of a dead star

Stars stay bright because of nuclear fusion

When it stops, the star dies, and the core is left behind ...



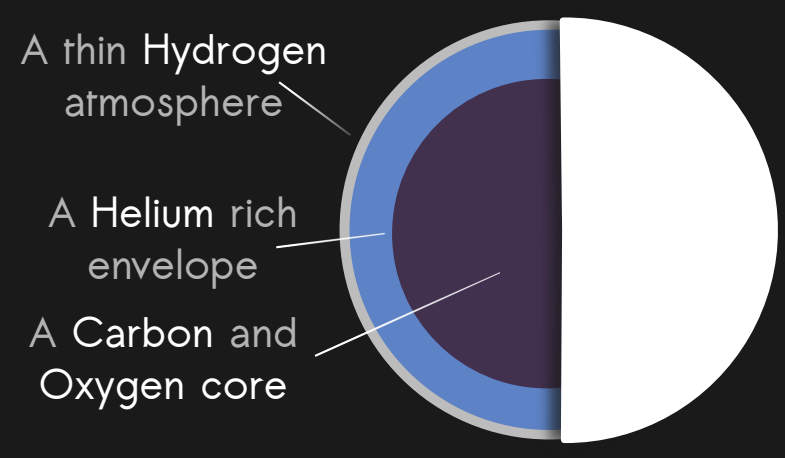
The White Dwarf

This is the future of our Sun!

Planetary nebula: The envelope of the star is ejected into space as it dies, creating beautiful colours and patterns.

97% of all stars will become White Dwarfs

They are made of left-overs from the dead star and by-products of the fusion that powered it.



They are ...

60% the mass of the Sun

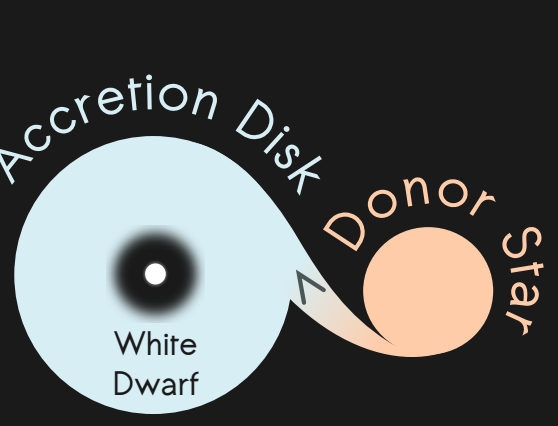
Earth-sized

So dense that ...

One spoonful would weigh a tonne!

They cause giant explosions when they have a close companion.

Mass Transfer



10,000 times more energy than the Sun in a year!

Nova

From explosive burning of the material on the surface of the white dwarf. It does not fully disrupt the star and can repeat.

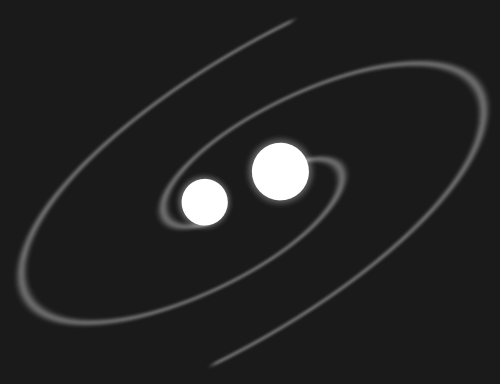
OR

10 million times more energy than a Nova!

Supernova

The entire white dwarf burns explosively: in a few seconds, the whole star is gone,

Merger



Gravitational Waves

Ripples through space time as the two white dwarfs spiral in.

AND

Supernova

The white dwarf merger burns explosively and is fully disrupted: there is no remant.