The life cycle of stars

AIYSHA Have you seen the line-up for this year's Big Star Survival?

Yeah… huh... me either... most of them are Z-list celebrities. It's not like they're real stars.

ADA Activating astronomy database... searching for stars.

AIYSHA Uhh, not those stars. Uhh, I really should delete this app.

ADA Stars are formed when gravitational forces clump a high concentration of gas and dust together into a single point.

This causes a great amount of pressure and a nuclear reaction occurs inside the newly forming star. It gradually gets hotter and hotter until it starts to glow.

This is a protostar - the first step in the life of all stars. When the internal pressures and gravitational pressures stabilize, a star is created.

At this point, the life cycle of stars can go one of two ways depending on its size.

One, the protostar becomes an average, main sequence star - not that big in comparison to other stars, but a similar size to our Sun. As it then nears the end of its life, the nuclear reactions run out of fuel.

The pressure pushing outwards increases and takes over the gravitational pressure inwards. It then gets bigger and turns into a red giant – which isn't as hot as it was before.

Then as the fuel for the nuclear reaction comes to an end, what was once a big star then shrinks to become what is known as a white dwarf. Eventually this dies and becomes a black dwarf.

AIYSHA Maybe I won't delete you, Ada. This is epic.

ADA Or two, the protostar becomes so big that it becomes a supergiant.

The first stage of this star's dying process is for it to become a super red giant. Eventually its size causes the core to break down, and the star explodes due to the internal pressure. This is called supernova.

From there it either continues as a neutron star or it collapses and becomes a black hole. Now you know about the life cycle of real stars.

AIYSHA Wow, pretty awesome eh, Steve… Steve?

Ha, your secret's safe with me, Steve.