



Sixty Second Adventures in Astronomy

Black Holes

David Mitchell:

60 Second Adventures in Astronomy. Number twelve, Black Holes.

DIY tip 34 - How do you make yourself a black hole?

A black hole occurs when something has so much mass in such a small space, that nothing can escape its gravitational pull – not even light.

In 1931 Subrahmanyan Chandrasekhar calculated that, if a star is big enough, when its fuel runs out there is nothing to stop gravity from making it's core collapse to create a black hole. Unfortunately for Chandrasekhar, his contemporaries like Sir Arthur Eddington, just didn't believe him.

But it turns out he was right and in 1983, he eventually won a Nobel Prize for it. So if a star is big enough to begin with when it collapses it becomes so dense that its gravitational pull won't let objects or light escape.

In fact you would make a black hole if you crushed any object until it was small and dense enough.

But you don't always have to crush something to make a Black Hole – the bigger one is, the less dense it needs to be.

So you could make one out of tap water – though the required amount will fill the space between the Sun and Jupiter... and sadly there's not enough water in the galaxy for that. So for you DIY enthusiasts you'll probably have to order it in specially.