

## Stars junior

Stars are giant balls of incandescent gas. The size, colours, temperature and luminosity vary enormously: they can be double, triple, or they may be part of immense masses of thousands of other stars.

All the stars in the sky were born from a cloud of dust and gas, a cloud which, for example, after an explosion of a nearby star, contracted and divided into smaller clouds. During contraction the centre of the cloud, known as **protostar**, overheated till it burst into flames forming a new star. The speed at which the stars burn the hydrogen determines the duration of their life. Bigger stars live hundreds of millions of years, the smaller ones last billions of years. For example, the giant blue stars have a short life and explode, the hotter ones are light blue and they burn their hydrogen in a regular manner: Proxima Centauri, the star that is closest to the Sun is a red cold star and it burns its gas very slowly. The **Sun** shall continue to burn for 5 billion years more, and when it consumes all the hydrogen, it shall start to dilate and form a red giant with an enormous surface. Then it will shrink into a white dwarf, a weak hot star that will cool slowly for billions of years.

Stars that are bigger than the Sun explode when the hydrogen is all consumed, giving rise to a **supernova**. Their nucleus becomes smaller till it is as big as a pin head. Notwithstanding this, the star maintains its force of gravity, that is so powerful that it absorbs all the light. This phenomenon is known as **black hole**, in other words a celestial body that has a very strong gravitational pull that absorbs all the light.