

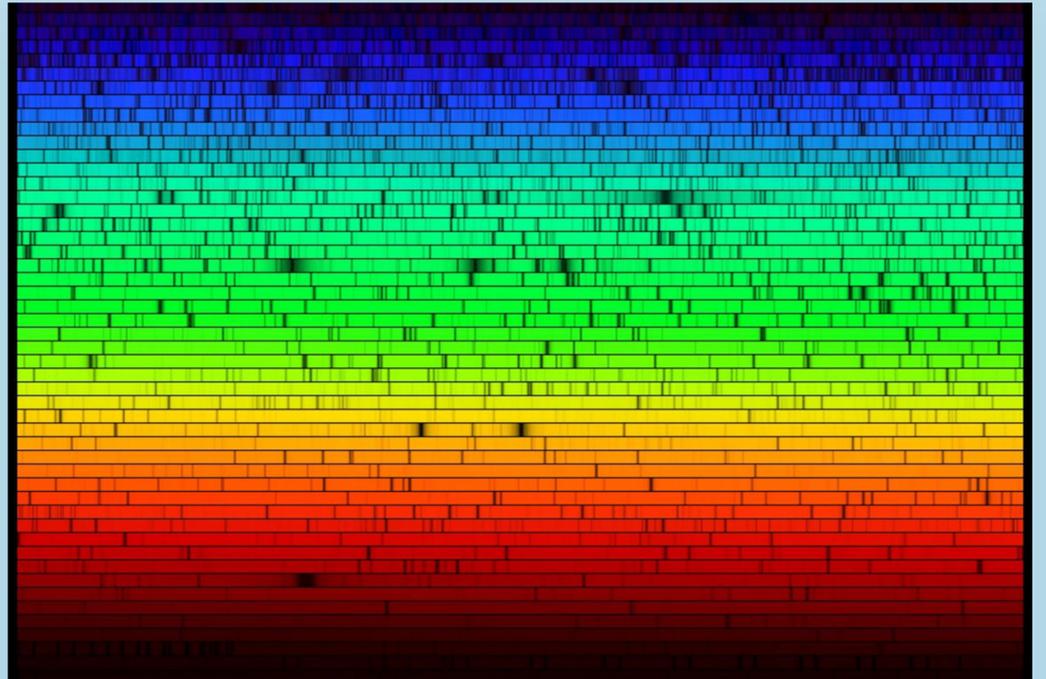
# Stars in Colour

Just by looking at the colour of a star, it is possible to work out how hot it is, how old it is and even what it is made of...

## Reading the stars

Using special equipment, we can look at the solar spectrum of stars right across the universe.

What's more, the stuff that a star is made of absorbs some of the light that comes from that star, which creates dark lines and bands in the spectrum. If you know the pattern of those dark bits, you can work out what the star is made from.

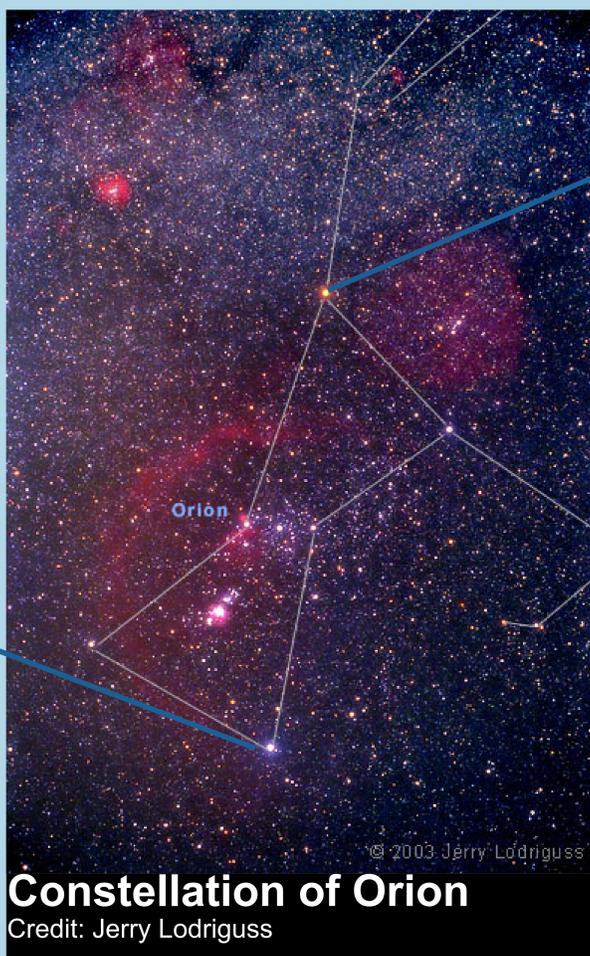


**The solar spectrum**

Credit: Nigel Sharp, National Optical Astronomical Observatories/National Solar Observatory at Kitt Peak/Association of Universities for Research in Astronomy, and the National Science Foundation. Copyright Association of Universities for Research in Astronomy Inc. (AURA), all rights reserved.

## Hot blue to cool red

You don't even need special equipment to find out the temperature of stars. Even with the naked eye, the colour of a star can tell us how hot or how cold it is.



### Hot blue

The hottest stars, like Rigel in Orion, are blue. They tend to be made up of small atoms, such as atomic hydrogen.

### Cool red

The coldest stars, like Betelgeuse in Orion, are red. A solar spectrum of a cool red star would show broad dark bands which indicate the presence of molecules such as oxides. (These form when atoms join together).

### Mellow yellow

Cooler stars, like our own sun, are yellow. They usually contain heavier elements (such as Carbon and Oxygen), which are formed when little atoms combine to make larger atoms.

**Constellation of Orion**

Credit: Jerry Lodriguss

## Forming dust clouds

Some of the molecules on the cool red stars bond together to create dust grains. These dust grains then form vast dust clouds (made from a mixture of soot and sand). These clouds form structures, such as the Eagle Nebula, where new stars are born.