

BLUE SUPERGIANT

A blue supergiant isn't just bigger than our Sun. It's also much hotter!

Rigel is part of the Orion constellation.

ORION

Rigel

BIGGEST AND BRIGHTEST

"We're headed toward Rigel," Captain Gamma said. "Aim for the brightest star you see."

Kara aimed the *Stella* toward a shining point in the vast blackness. "We must be close," she said, raising *Stella's* protective shield. "It's already too bright to look at. This star is huge!" She brought the *Stella* closer so the Star Reader could take measurements. She felt the controls straining against the enormous gravity.

"Its diameter is 74 times the Sun's," Manolo calculated. "And it's 40,000 times brighter! We can't get much closer."

"We don't want to stay long, either," Captain Gamma said. "This is a blue supergiant. It has a short life span, so it might be unstable. We don't want to be around when this thing becomes a supernova."

"Wow! It's 18 times the mass of the Sun, and its temperature is over 10,700 degrees Celsius!" Kara said. "Too hot for me." She leaned hard against the controls and steered the *Stella* back out toward the blackness.

SUPERNOVA

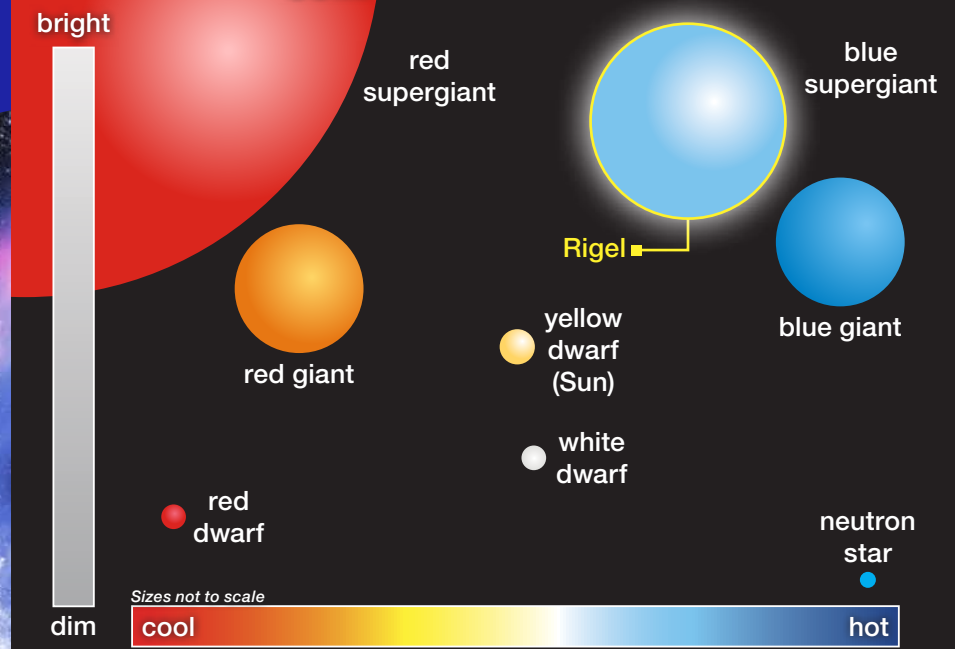
A star might seem like it will last forever, but it won't. In fact, a blue supergiant star has a short life span compared to other stars. It will "only" exist for a few million years.

A star releases energy through nuclear fusion. The star burns up hydrogen as a hot bonfire burns up a log. When the fuel runs out, the star's core suddenly collapses due to gravity. Its outer shell explodes in a fiery blast. This explosion is called a *supernova*. It's one of the most powerful explosions in the universe. A supernova releases more energy in one week than the Sun releases over its entire life!



Supernovas are so bright that scientists can spot them in galaxies millions of light-years from Earth.

COMPARING STAR TYPES



Rigel is a blue supergiant, which is one of the brightest star types in the universe. It looks blue because of its high temperature.

Wowser!

A massive blue supergiant has a life span of about three *million* years. That may sound like a long time, but the longest-lived stars, red dwarfs, can exist for nine *trillion* years!

Do You Know?

The hottest part of a candle flame is blue, while the white part is cooler. Similarly, a blue supergiant looks blue because it is so hot.

