

**The Properties of Stars—First Thoughts****E1:A0**

The nearest star, our sun, is approximately 150 million kilometers from Earth. A star relatively close to Earth, Alpha Centauri, is a yellow star similar to ours that is 270,000 times farther away from us than our sun is. If we just were to consider these two stars, we might conclude that all stars in the night sky are medium-sized yellow stars. However, extending our search well beyond our solar system, we find that many kinds of stars exist in our galaxy and throughout the universe.

In this Exploration, you will investigate the properties of stars. As you proceed, keep in mind the following Essential Question:

**How do stars differ from moons and planets, and from one another?***First Thoughts—Making Claims*

To begin this Exploration, you will make claims about the properties of stars.

1. The image in Figure 1-1 shows many stars. Ask your teacher to project a color image of this figure for you to observe.

Of the stars in this image, which do you think are:

- hottest?
- coldest?
- biggest in diameter?
- smallest in diameter?
- brightest?
- least bright?

2. What information did you use to determine these properties of the stars?

3. Do you have enough information to determine all of these properties? If not, what other information would you need?



Figure 1-1: Image of a cluster of stars called the Jewel Box or NGC 4755. It is a large assemblage of stars about 7500 light-years from Earth.