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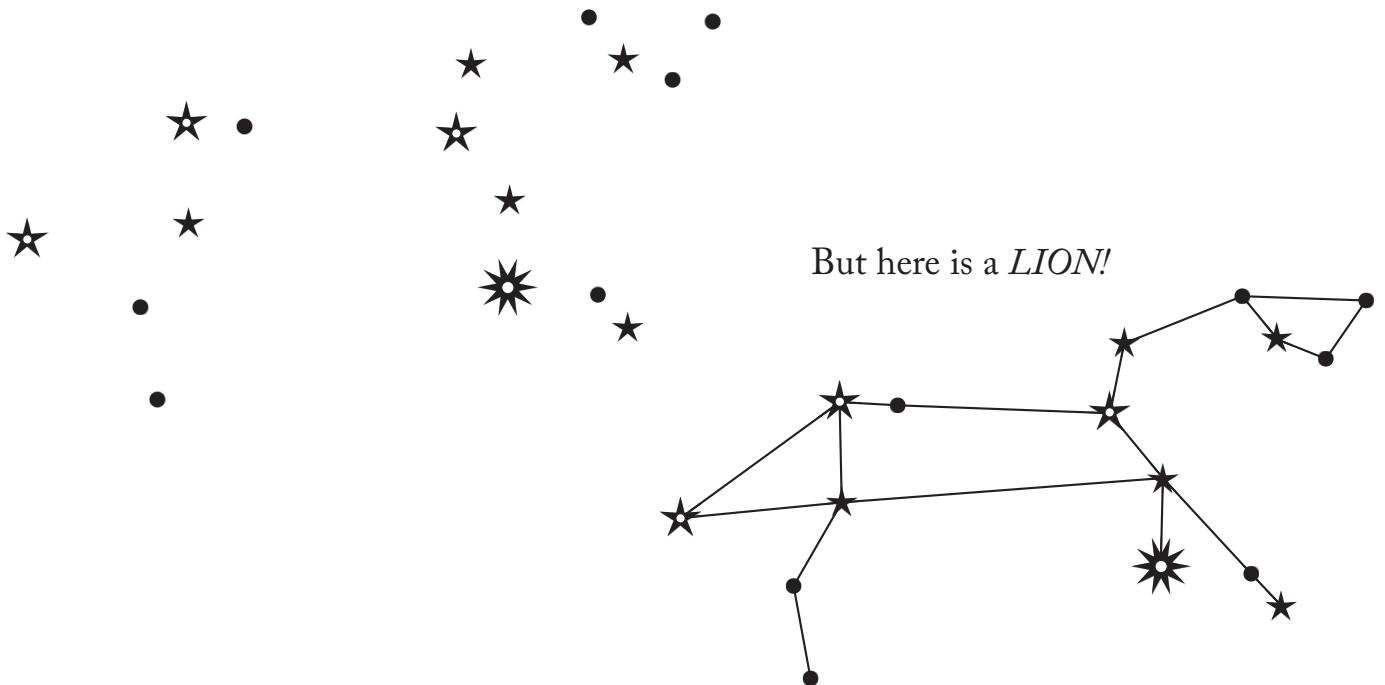
# CONSTELLATIONS

Long ago, before artificial lights, when the night was very dark, the sky was full of stars. People have always been fascinated by the night sky. They noticed that as the hours of night went by, the stars appeared to move across the sky in a regular way. They realized that the stars could be used to tell time and direction. But there were just *too many stars*—nobody could remember them all. So they organized the stars into small groups, seeing them as familiar figures they could remember—animals, people, gods, and heroes.

Different peoples saw figures from their own cultures. The ancient Egyptians, Chinese, and Japanese each had their own figures in the sky. Where we see a bear, the Egyptians might have seen an alligator, or the Japanese a rabbit! The figures we are studying in this book are the ones invented by the ancient Greeks and Romans.

An imaginary figure in the sky is called a *constellation*, meaning "group of stars." To see the figure more clearly, you can imagine lines connecting the stars.

Here is a bunch of stars.



The 2<sup>nd</sup>-century astronomer Ptolemy described 48 constellations. Today, the IAU (International Astronomical Union) officially recognizes 88 constellations.

# MOTIONS OF THE EARTH

Our planet, Earth, is always moving.

It moves around the sun. This motion is called *revolving*. Earth revolves around the sun once every 365 days; this is what makes a year and the seasons.

Earth, a big ball, also spins. This motion is called *rotating*. Earth rotates once every 24 hours; this is what makes a day. Daytime is when your location on Earth is turning toward the sun; nighttime is when your location on Earth is turning away from the sun.

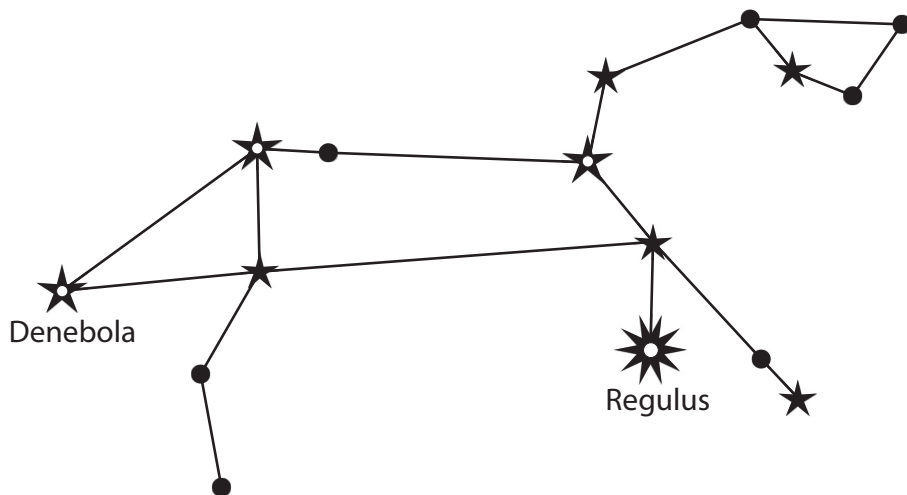
When the ancients watched the night sky, the stars seemed to move in a curved path across the sky. But the stars were not moving; Earth was moving—rotating. The motion of the stars across the night sky is *apparent motion*, meaning that the stars only *appear* to move.

The paths of the stars also appear to shift with the seasons. This is another kind of apparent motion, caused by the revolution of the earth around the sun.

## NAMES OF STARS

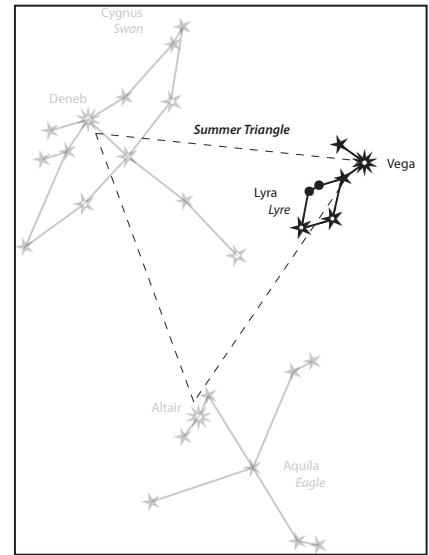
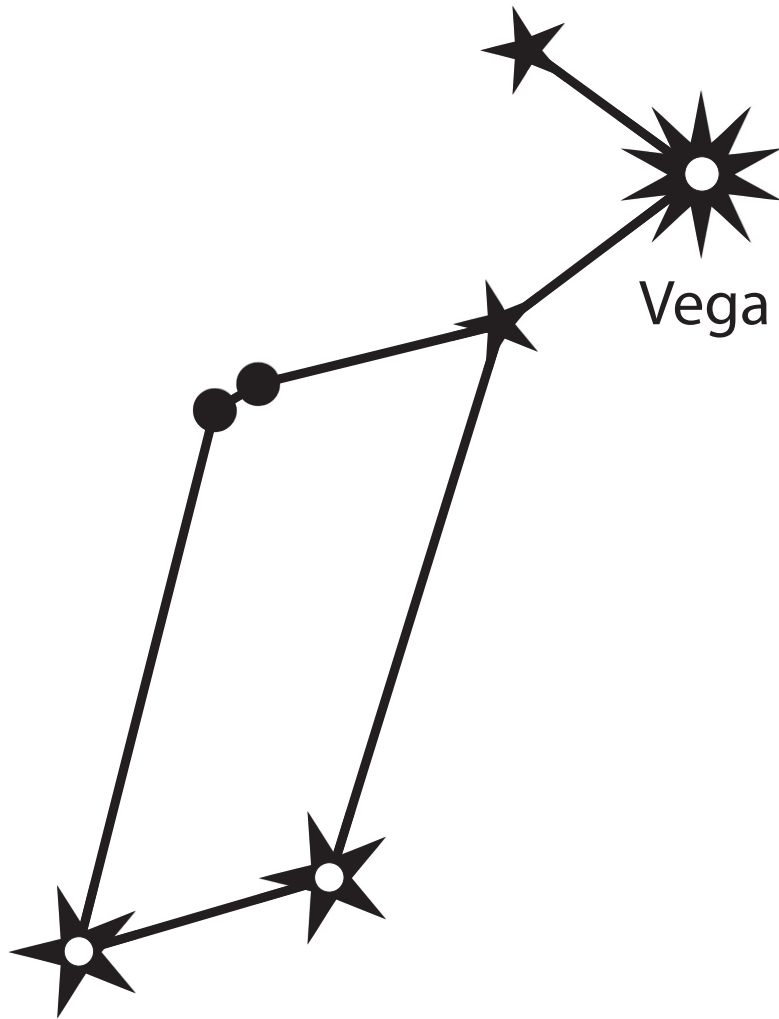
The ancients gave names to the brightest stars in the sky. Many of these names are familiar to us from Greek and Roman mythology, such as Pollux, son of Zeus, or Regulus, a mythical beast. Others sound very exotic to us, like Aldebaran. These exotic-sounding names are usually Arabic. Aldebaran in Arabic means "the follower." The ancient Arabs were excellent sailors and named many stars because they used them for navigation.

Here is the LION again, with its brightest stars named.



# LYRA

(Lyre)

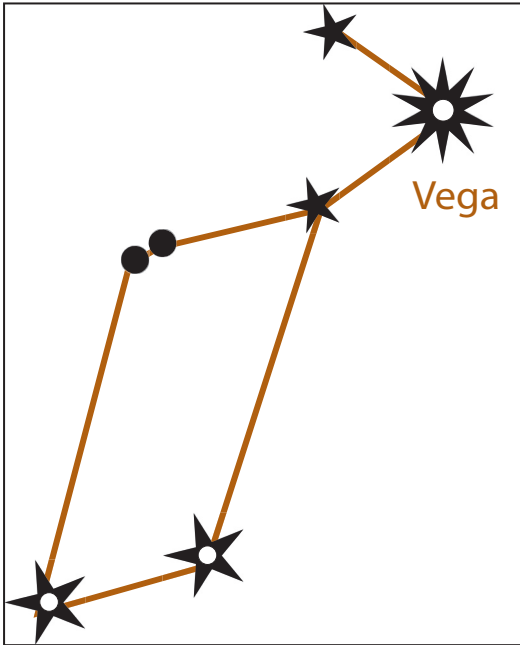


The lyre is a hand-held stringed instrument resembling a small harp. It is the instrument associated with the Greek gods Hermes and Apollo (*D'Aulaires' Book of Greek Myths*, pp. 102-105). Apollo gave a lyre to his son, Orpheus, who learned to play so well that he was able to tame wild animals.

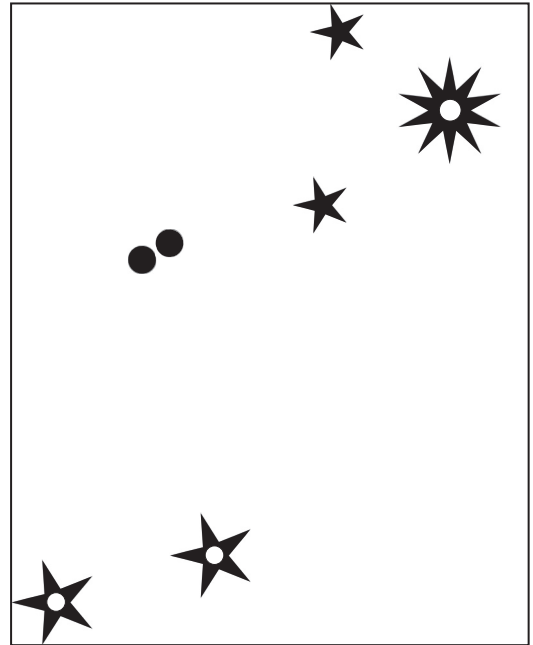
Lyra was also known to the Romans as *vultur cadens* ("falling vulture"). It was one of the 48 constellations listed by the 2<sup>nd</sup>-century astronomer Ptolemy.

Although a small constellation, Lyra contains the bright star Vega and several nebulae, including the famous Ring Nebula. The constellation is now known to contain several exoplanets.

**Exercise.** Draw the constellation, label the brightest star, and give the Latin and English names for the constellation.



Lyra



Lyre

15 Brightest Stars	Constellation
1. Sirius	
2. Arcturus	
3. Vega	Lyra/Lyre
4. Capella	
5. Rigel	
6. Procyon	
7. Betelgeuse	
8. Altair	
9. Aldebaran	
10. Antares	
11. Spica	
12. Pollux	
13. Fomalhaut	
14. Deneb	
15. Regulus	