

Expository  
Text

# Destination Saturn

by Karen Alexander

Mc  
Graw  
Hill

PAIRED  
READ

Why the Stars Twinkle

## STRATEGIES & SKILLS

### Comprehension

**Strategy:** Summarize

**Skill:** Main Idea and  
Key Details

### Vocabulary Strategy

Suffixes

### Vocabulary

amount, astronomy,  
globe, solar system,  
support, surface,  
temperature, warmth

### Content Standards

Science

Earth and Space Science

Word count: 815\*\*

**Photography Credit:** Cover NASA/JPL/Space Science Institute.

\*\*The total word count is based on words in the running text and headings only. Numerals and words in captions, labels, diagrams, charts, and sidebars are not included.



**Essential Question**

What do we know about Earth and its neighbors in space?

# Destination Saturn



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## Chapter 1

Exploring Saturn ..... 2

## Chapter 2

Mission to Saturn ..... 8

## Chapter 3

Storm on Saturn ..... 13

**Respond to Reading** ..... 15

## **PAIRED READ**

**Why the Stars Twinkle** ..... 16

**Glossary/Index** ..... 19

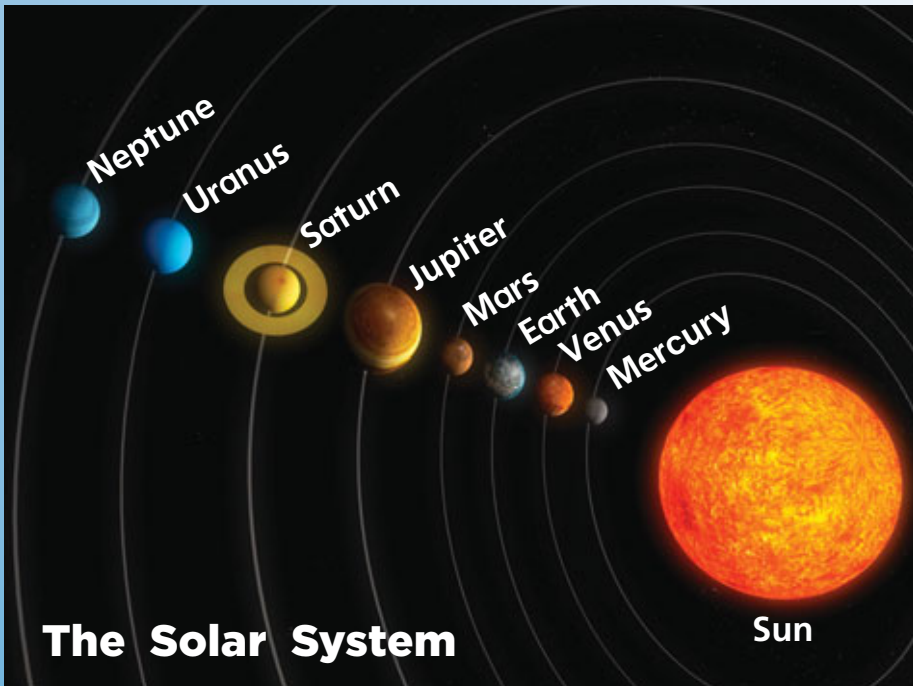
**STEM** **Focus on Science** ..... 20

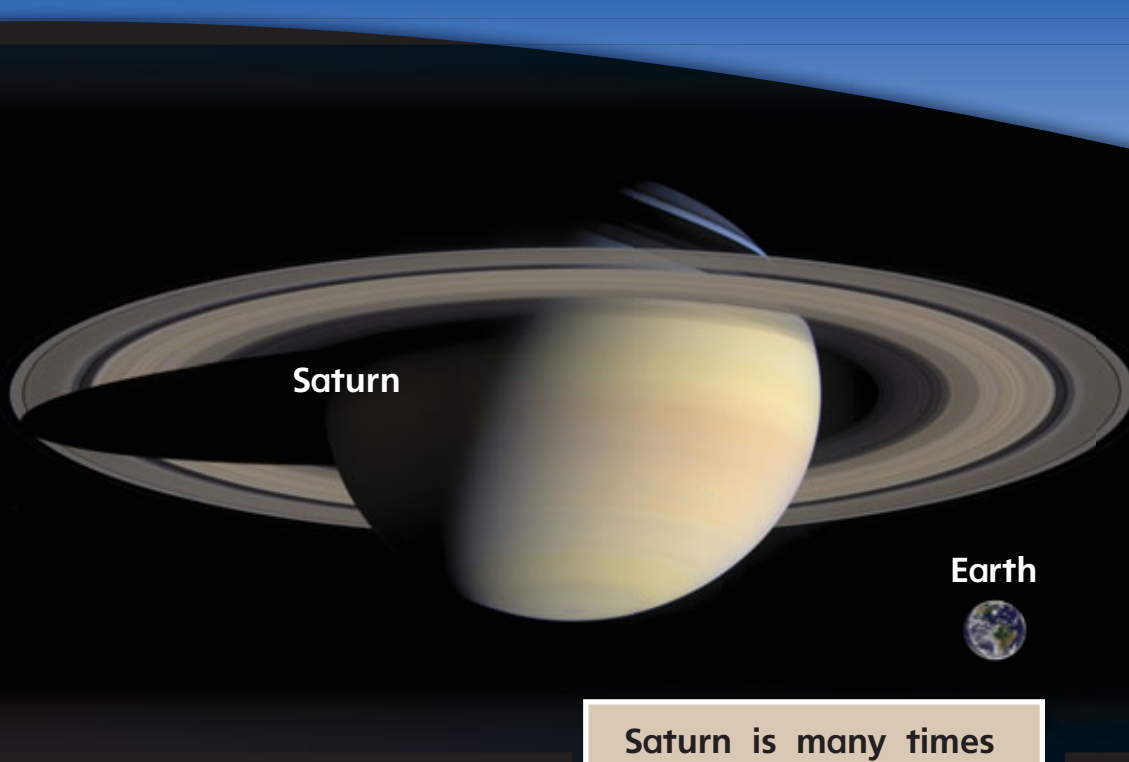
# Exploring Saturn



People have studied the stars and **planets** for thousands of years. This study is called astronomy.

Saturn is the second biggest planet in our solar system. It is so big that people can see it without a **telescope**.





Saturn

Earth



Saturn is many times bigger than Earth.

Saturn doesn't look round, like a globe. It looks as if someone has pushed the top and bottom of a ball together. That is because it **revolves**, or turns, very fast.

The surface of Saturn is gas. But the planet has a rocky center. It could not support human life.

# The Rings of Saturn

Many people know Saturn because of its rings. The rings are mainly bits of ice. They have bits of rock and dust, too. Some bits are tiny. Some are as big as a mountain. The rings are about half a mile thick.

Scientists do not know where the rings came from. They think they may be parts of moons that broke up.

Saturn's rings

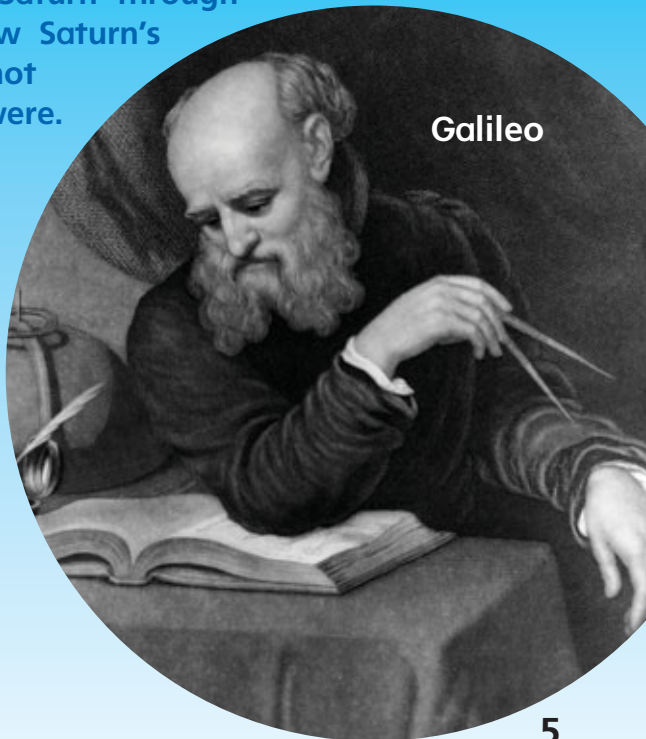
Eight groups of rings have been discovered so far. Each group has many rings. There are gaps between the rings.

★ Did You Know?

If Saturn were put in a huge pond, it would float.

## Discovering the Rings

The **astronomer** Galileo was the first person to look at Saturn through a telescope. He saw Saturn's rings, but he did not know what they were. Many years later other astronomers figured out that the shape was a ring. Later still, they realized that Saturn had more than one ring.



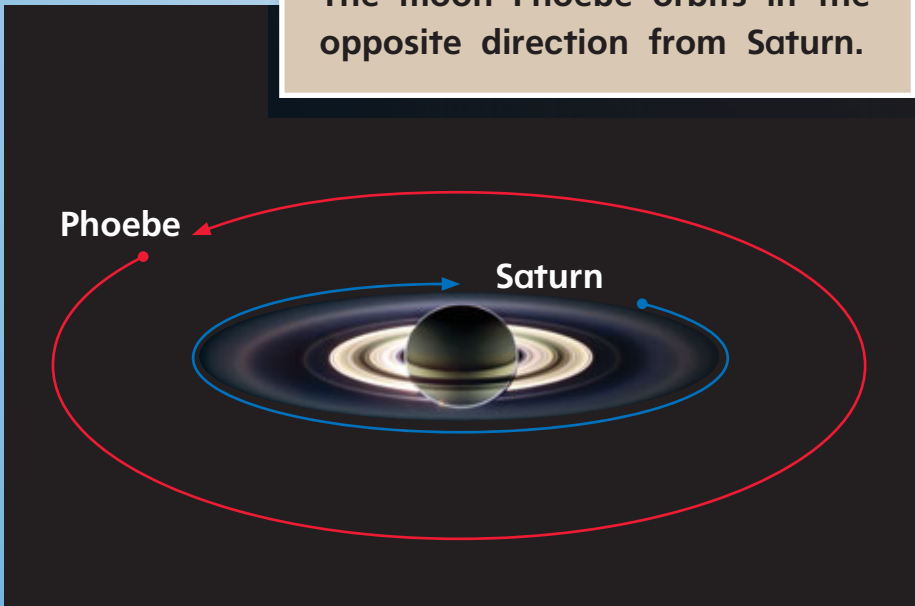
Galileo

# Many Moons

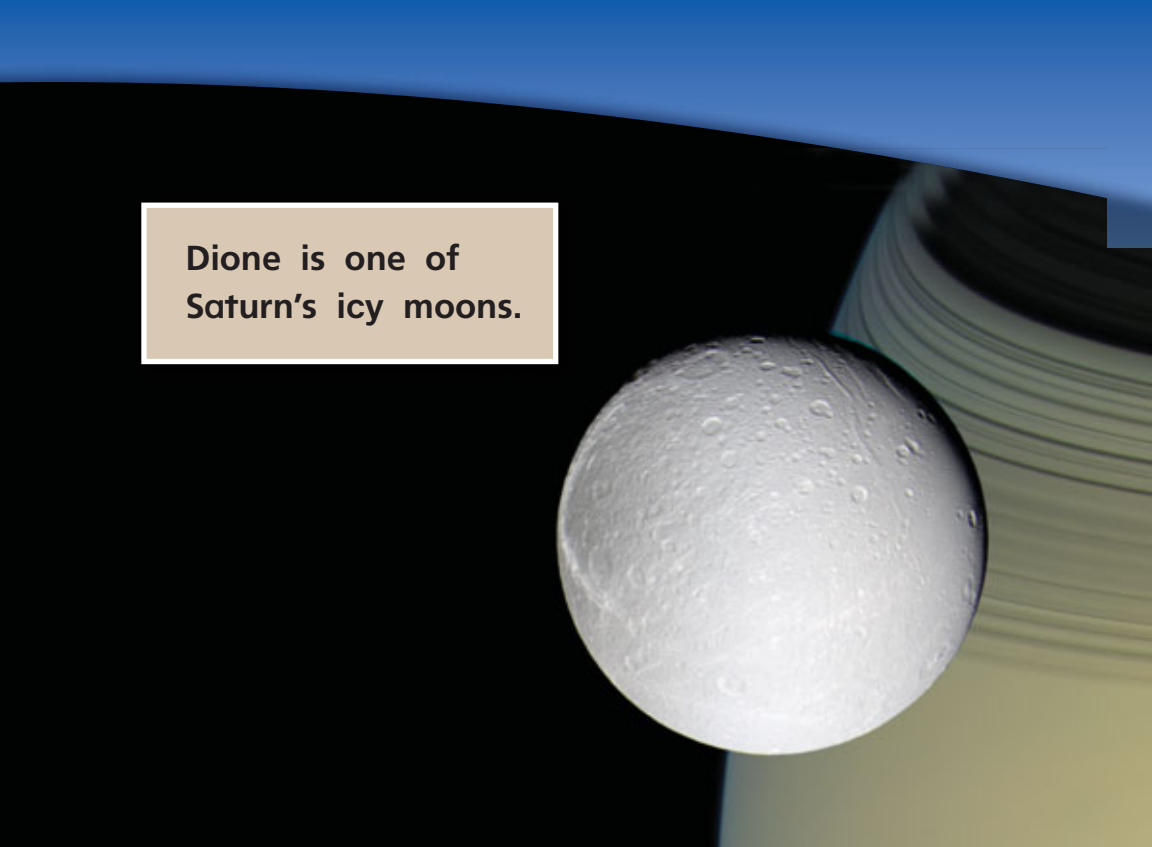
Earth has just one moon. Saturn has many moons. About 53 of the moons have names. More moons are being found all the time. Titan is the biggest moon.

Many of the moons are icy. Some are huge. Some are tiny.

The moon Phoebe orbits in the opposite direction from Saturn.







Dione is one of Saturn's icy moons.

Two of the moons travel along the same path. They **orbit** within 30 miles of each other. Every four years, the one on the outside catches up with the one on the inside. Then they swap places.

**STOP AND CHECK**

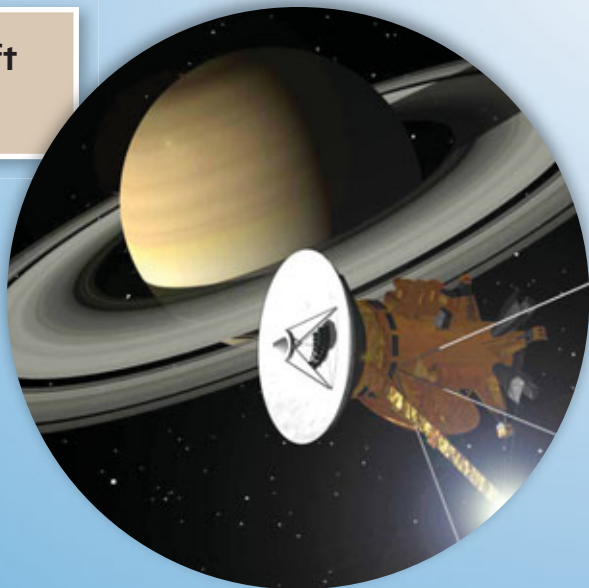
Name two details about Saturn from this chapter.


# Mission to Saturn



Scientists are learning more about Saturn. In 1997, a spacecraft left Earth on a mission to Saturn. It took seven years to reach the planet. The spacecraft gathered information about Saturn and its moons. Part of the spacecraft landed on the moon Titan.

The spacecraft orbits Saturn.





This part of the spacecraft landed on Titan.

## More Moons

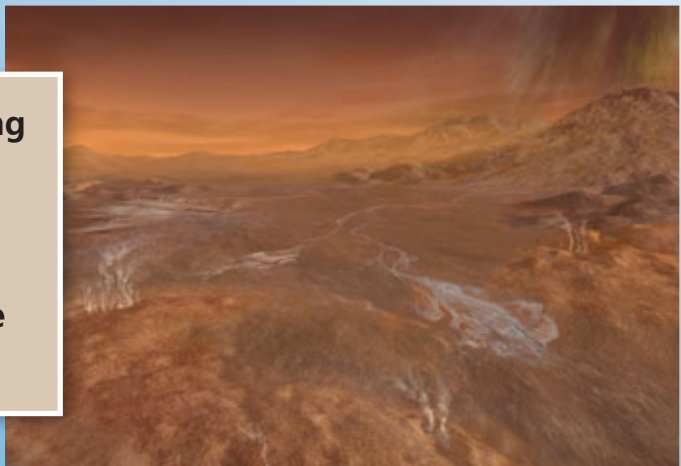
When the mission began in 1997, only 18 of Saturn's moons had been discovered. The Cassini mission found some more. Others were discovered with the use of improved telescopes.

The spacecraft discovered a huge amount of exciting information about Titan. Astronomers think that Titan might be like Earth was a very long time ago.

Photos taken by the spacecraft show that the landscape is similar to Earth's. Titan has river valleys and mountains. It has sand dunes. Titan might also have weather that is like the weather on Earth, with rain and wind.

Scientists think there may be water under the surface of Titan.

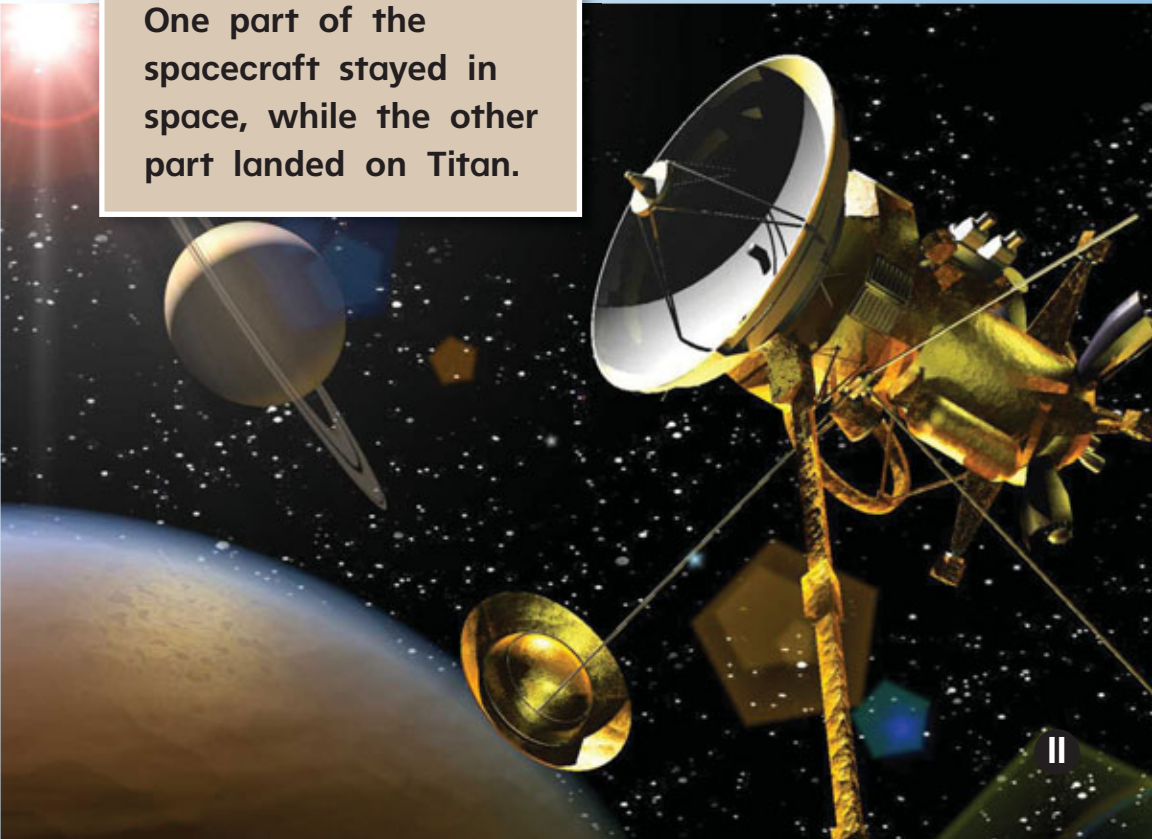
**This painting of Titan is based on information sent by the spacecraft.**

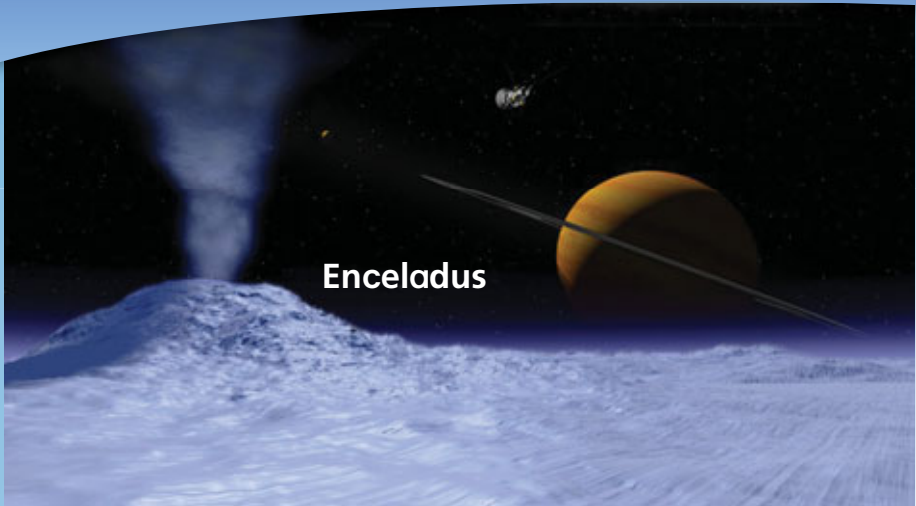


Scientists learned more about Saturn's other moons, too. Hyperion looks like jagged rock. This is very unusual. Most objects that revolve in space are round.



One part of the spacecraft stayed in space, while the other part landed on Titan.





The moon Enceladus looks bright. That is because it is covered with ice. The ice reflects the sun back into space. Jets of icy water spray from this moon. The water is like Earth's oceans. Scientists think there may be salt water beneath the surface. The temperature on the moon is warm. This may mean there is warmth deep inside the moon.

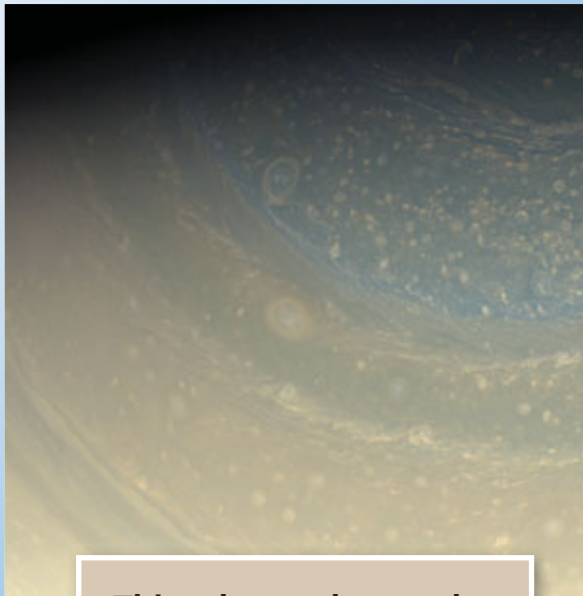
**STOP AND CHECK**

In which ways is the moon Titan like Earth?

# Storm on Saturn



During the mission, the spacecraft kept track of a huge thunderstorm on Saturn. The storm goes around the whole planet. It covers an area eight times bigger than the area of Earth. It is also stronger than any storm on Earth.



This photo shows the storm on Saturn.

## Learning About Space

People explore space for two main reasons. First, they want to find out more about space. Second, they want to see if there is life on any other planet.

The mission to Saturn has collected a huge amount of information. The mission ends in 2017. Who knows what other amazing discoveries it will make before then!

### STOP AND CHECK

How big is the storm on Saturn?



# Respond to Reading

## Summarize

Summarize what you have learned about Saturn. Use the Main Idea and Key Details Chart to help you.

Main Idea
Detail
Detail
Detail

## Text Evidence

1. How do you know that *Destination Saturn* is nonfiction? **Genre**
2. Reread page 10. Why are scientists interested in Titan? **Main Idea and Key Details**
3. What does *icy* on page 12 mean? **Suffixes**
4. Write about why the mission to Saturn is important. Use details from the text to support your answer.

**Write about Reading**

## Compare Texts

You have read about a spacecraft going to Saturn. Now read about how people used to explain space.

# WHY THE STARS TWINKLE

Long, long ago, Earth and the sky were close together. People could touch the sky.

One day, a woman went outdoors to grind some rice. She had lovely, long, silky hair. She spent a great deal of time brushing her hair. The woman always wore her jewelry. She even wore it when she worked.

It was a hot day. The woman didn't want to work. She wanted to sit in the warmth. She put a large amount of rice into a bowl. Then she started to grind it. It was hard work. The woman got angry.

The woman got a blister where her gold ring rubbed the skin on her finger. She took off the ring and hung it on the sky. The silver comb in her hair fell out. That made her angrier. She hung the comb on the sky. Then her necklace got in her way. She hung that on the sky, too.

Each time the woman raised her arms to pound the rice, she pushed the sky farther away. But she didn't realize what was happening.





At last, the woman finished her work. She stood up. She felt air brush her face. The woman looked up. The sky was now far above her. The woman could see her jewelry high in the sky. But she couldn't reach it.

The woman's silver comb became the moon. Her gold ring became the sun. Her sparkly necklace became the stars that twinkle across the surface of the sky.

Illustration: Pamela Becker



## Make Connections

Why do you think *Why the Stars Twinkle* was written? **Essential Question**

How is the explanation for the stars, moon, and sun in this legend different from the descriptions of space in *Destination Saturn*? **Text to Text**

# Glossary

**astronomer** (*uh-STRAH-nuh-muhr*)

a person who studies the stars and planets. (*page 5*)

**orbit** (*AWR-buht*) to follow a path around a planet, moon, or other space body (*page 7*)

**planets** (*PLA-nuhtz*) large bodies, such as Earth, that orbit a sun (*page 2*)

**revolves** (*ri-VOLVZ*) goes around and around (*page 3*)

**telescope** (*te-luh-SKOHP*) a long tube that makes distant objects look bigger (*page 2*)

# Index

Enceladus, 12

Hyperion, 11

moons, 6–9, 11, 12

rings, 4, 5

telescopes, 2, 5, 9

Titan, 6, 8–11

# Focus on Science

**Purpose** To find out about a planet.

## What to Do

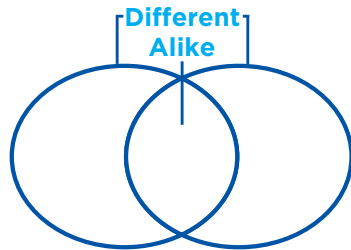
**Step 1** Choose a planet that you are interested in—not Saturn.

.....

**Step 2** Find out as much as you can about the planet—its size, interesting features about it.

.....

**Step 3** Make a Venn chart comparing your planet with Saturn.



**Conclusion** What can you learn by comparing and contrasting two planets in this way?

# Thinkmark

## The Topic

What are *Destination Saturn* and *Why the Stars Twinkle* mostly about?

## Vocabulary

What new words did you learn in the text?

What helped you understand the meaning of these words?

## Conclusions

What did you learn from *Destination Saturn*?

## Author's Purpose

Why do you think the author paired a legend with an expository text?