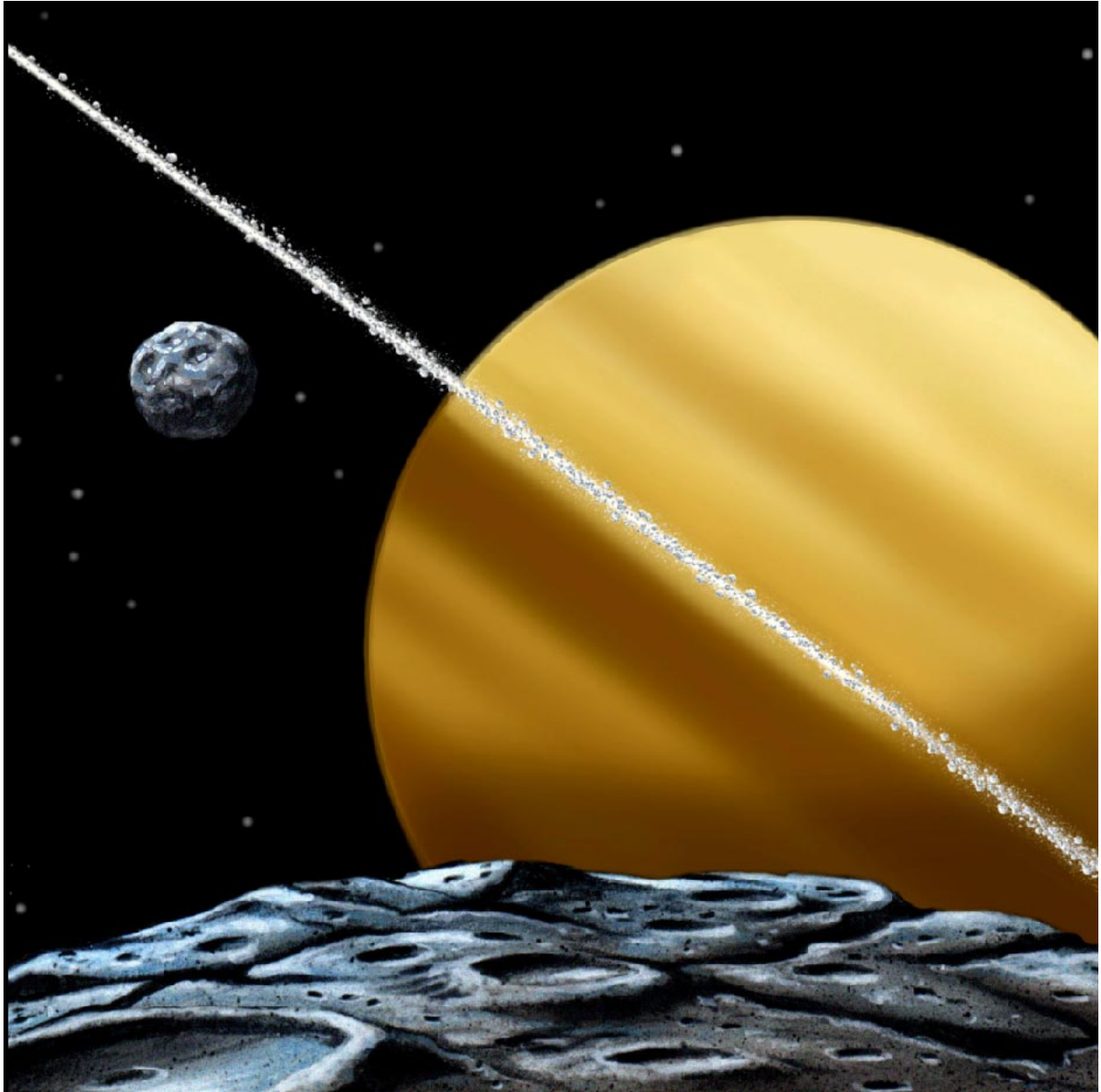




Saturn's Moons

Questions, Answers, and Cool Things to Think About



Discovering Saturn: The Real Lord of the Rings

Next time you look up at the Moon in the night sky, imagine what it would be like to live on a world that had 31 moons! That's how many we've found so far orbiting Saturn. There might be even more that we haven't discovered yet.

discover even more as it orbits the planet from 2004 to 2008.

Most of Saturn's moons are much smaller than Earth's Moon. But they are strange and fascinating in many ways.



No one knew that Saturn had any moons until 1655, when a Dutch astronomer named Christiaan Huygens pointed a telescope at the giant planet and saw its largest moon, Titan, for the first time. During the centuries since then, as people built more powerful telescopes and sent robot explorers into space, we discovered more and more moons around Saturn. We've found 31 so far, and it's possible that the Cassini spacecraft will

Some of them help to keep Saturn's famous rings together. The rings are made up of millions of icy stones and specks of dust, and gravity from some of the moons keeps the material from floating away from the rings, much like a shepherd keeps sheep from wandering away from the flock. In fact, those moons are called "shepherd moons."

One moon, called Enceladus (in-CELL-uh-dus), is one of the shiniest objects

in the solar system. It's about as wide as Arizona, and it's covered in ice that reflects sunlight like freshly fallen snow. That makes it extremely cold — about 330 degrees below zero on the Fahrenheit scale! Some scientists think that the icy particles that make up Saturn's E ring came from volcanoes on this moon.

Another moon, Mimas (MY-muss), has a giant crater that is one-third as wide as the moon itself. In the center of the crater is a mountain as tall as some of the biggest mountains on Earth.

Two other moons, Epimetheus (ep-uh-ME-thee-us) and Janus (JAY-nuss), trade orbits with each other every few

years, taking turns being closer to the planet.

Iapetus (eye-A-pe-tus) may be the strangest of Saturn's moons. It looks like a big ball that's chocolate on one side and vanilla on the other side!

Some scientists think a moon called Phoebe (fee-bee) may have started out far beyond Pluto, and wandered billions of miles toward the Sun until it was captured by Saturn's gravity. Titan is by far Saturn's biggest moon. It's the second largest moon in the whole solar system. (The largest one, Ganymede, is in orbit around Jupiter.) Titan is bigger than the planets Mercury and Pluto!



Mimas



Iapetus

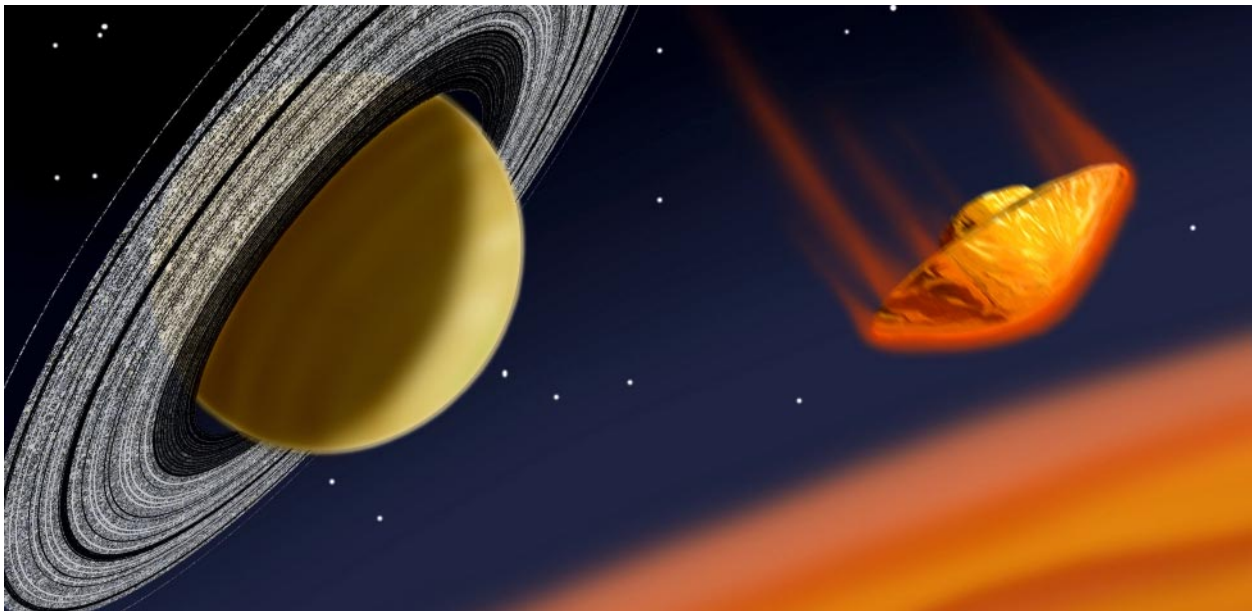
We haven't had a good look at Titan's surface yet, because it is hidden beneath a thick, deep-red haze. But scientists on Earth used the world's most powerful radar system to bounce microwaves off the giant moon — which was about 800 million miles away at the time — and the radar showed that there might be huge lakes or oceans on Titan. But they wouldn't be filled with water. Instead, they might be filled with a liquid that's kind of like alcohol!

The Cassini spacecraft is carrying something that may help us learn much

more about Titan. It's a machine called the Huygens probe, named after the astronomer who discovered Titan.

In January, 2005, the Huygens probe will fly to Titan and drop down through its atmosphere on a parachute, taking pictures and gathering information as it falls to the surface. It will use radio to send the pictures and information to Cassini, and Cassini will send them to us here on Earth.

Which of Saturn's moons would you most like to visit? Why?



Before its parachutes open, Huygens begins to fall through Titan's atmosphere.