

# What's Out There?



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For thousands of years, people have looked up into the night sky and wondered what was out in space. Even in the 1970s, little was known about the planets in our solar system that lie beyond Mars. Scientists wanted to study the outer planets, but they didn't have the money to launch lots of spacecraft. Then scientists calculated that by using a planet's gravity to boost the speed of the

spacecraft they could visit more than one planet. This idea worked best if the planets were near one another.

In the mid-1970s, scientists discovered that Jupiter, Saturn, Uranus, and Neptune would be near one another for about ten years. They calculated that this would not happen again until the 2150s. Scientists wanted to take advantage of this rare occurrence by building spacecraft that could travel to these outer planets.

The spacecraft they built, called Voyagers 1 and 2, were launched in 1977. That's more than 36 years ago! Both Voyagers reached Jupiter in 1979. They reached

Saturn in 1980 and 1981. Voyager 2 reached Uranus in 1986 and Neptune in 1989.

Scientists gathered thousands of pictures and data from these planets and their moons. They discovered many things, including that Jupiter, Uranus, and Neptune all had rings around them, like Saturn. Scientists also discovered more moons around all four planets and active volcanoes on one of Jupiter's moons. They even found an ocean of boiling water on Uranus.

After both Voyagers studied the planets, scientists decided to send them to outer space. Scientists wanted to know lots of things, such as: Where does our solar system end?, What is it like so far from the Sun?, and How far does the Sun's magnetic field reach?

Scientists hope they will learn much more before the Voyagers' power runs out in 2020. Right now, they have gone farther than any spacecraft has ever gone. The data they have collected has helped people better understand what is out in space.

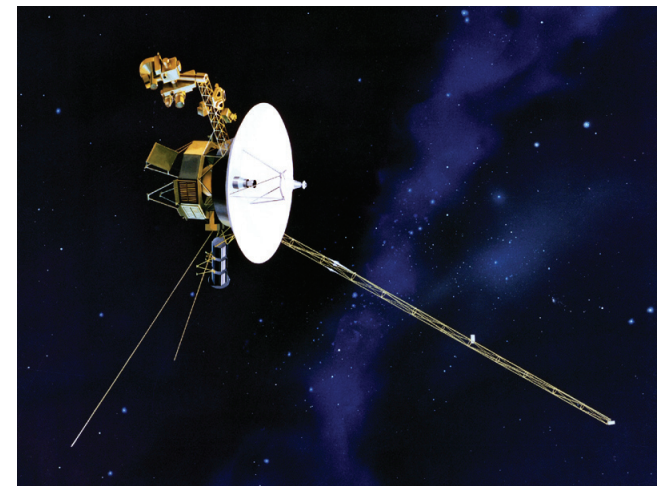


Illustration of Voyager spacecraft. Release into public domain by the National Aeronautics and Space Administration.

