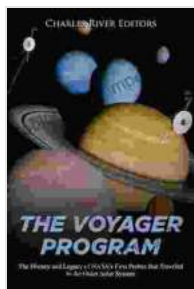


# The History and Legacy of NASA's First Probes that Traveled to the Outer Solar System

The exploration of the outer solar system has been one of the greatest scientific achievements of the 20th century. It has allowed us to learn about the planets, moons, and other objects that make up our cosmic neighborhood, and has helped us to understand our place in the universe.

The first probes to travel to the outer solar system were launched by NASA in the early 1970s. These probes, known as the Pioneer and Voyager probes, were some of the most ambitious and successful space missions in history. They traveled billions of miles, and sent back stunning images and data that revolutionized our understanding of the outer planets.



## The Voyager Program: The History and Legacy of NASA's First Probes that Traveled to the Outer Solar System

by Charles River Editors

★★★★☆ 4.2 out of 5

Language	: English
File size	: 7767 KB
Text-to-Speech	: Enabled
Enhanced typesetting	: Enabled
Word Wise	: Enabled
Print length	: 65 pages
Lending	: Enabled
Screen Reader	: Supported

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## **The Pioneer Probes**

The Pioneer probes were a series of unmanned spacecraft launched by NASA between 1958 and 1978. The first Pioneer probe, Pioneer 1, was launched in 1958 and was intended to orbit the moon. However, the probe failed to reach orbit and instead flew by the moon at a distance of about 34,000 miles.

The next two Pioneer probes, Pioneer 3 and 4, were launched in 1958 and 1959, respectively. These probes were also intended to orbit the moon, but they too failed to reach orbit. However, they did provide valuable data on the moon's surface and radiation environment.

In 1965, NASA launched Pioneer 6, which was the first probe to successfully orbit the moon. Pioneer 6 spent more than a year in orbit, and sent back valuable data on the moon's surface, gravity, and magnetic field.

The final Pioneer probe, Pioneer 10, was launched in 1972. Pioneer 10 was the first probe to travel to the outer solar system, and it flew by Jupiter in 1973. Pioneer 10 continued on to the edge of the solar system, and in 2003 it became the first spacecraft to leave the heliosphere, the bubble of charged particles that surrounds the sun.

## **The Voyager Probes**

The Voyager probes were a series of unmanned spacecraft launched by NASA in 1977. The Voyager 1 and Voyager 2 probes were both intended to fly by Jupiter and Saturn, and Voyager 2 was also intended to fly by Uranus and Neptune.

Voyager 1 flew by Jupiter in 1979 and Saturn in 1980. Voyager 2 flew by Jupiter in 1979, Saturn in 1981, Uranus in 1986, and Neptune in 1989.

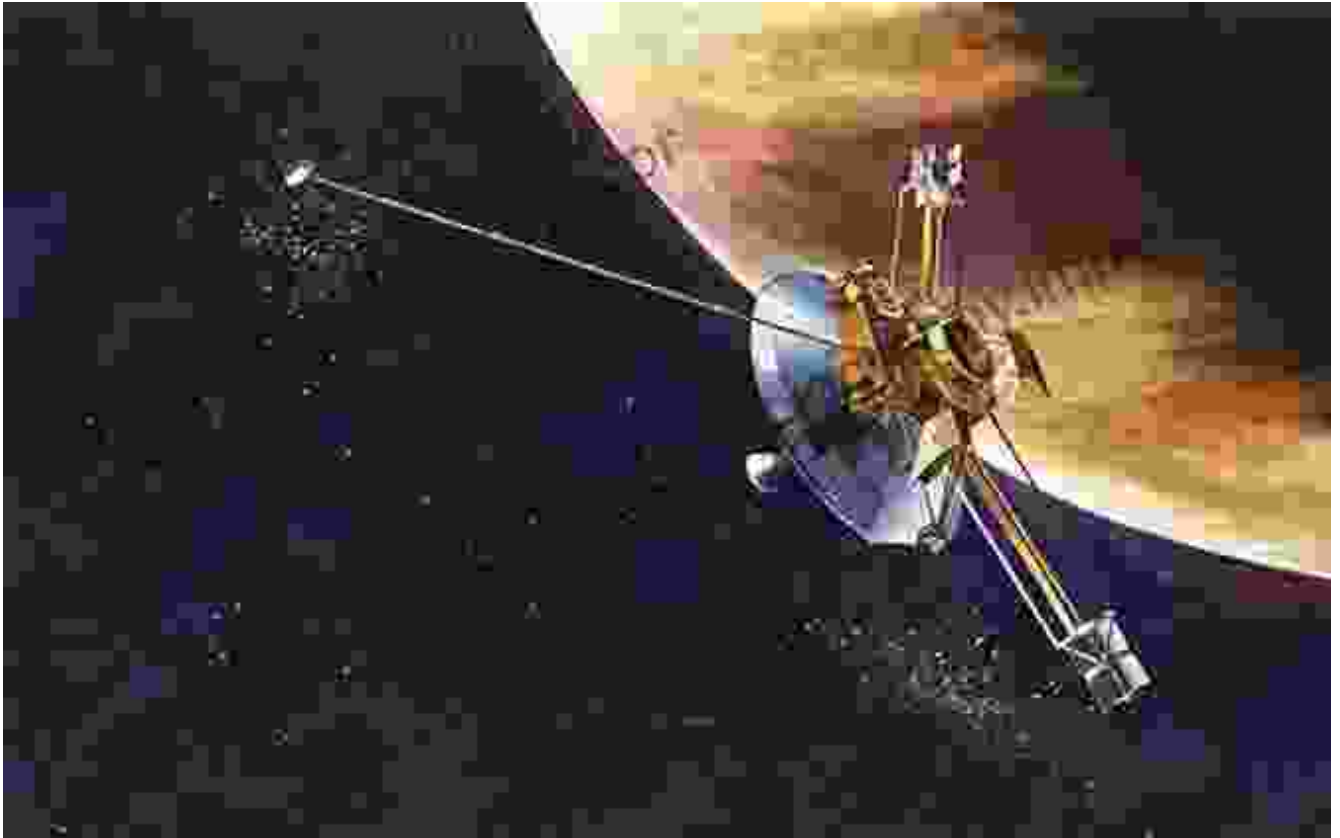
The Voyager probes sent back stunning images and data that revolutionized our understanding of the outer planets. They discovered active volcanoes on Jupiter's moon Io, and they found that Saturn's rings are made up of billions of small particles. They also discovered that Uranus and Neptune have complex magnetic fields and that Neptune has a large, dark spot on its surface.

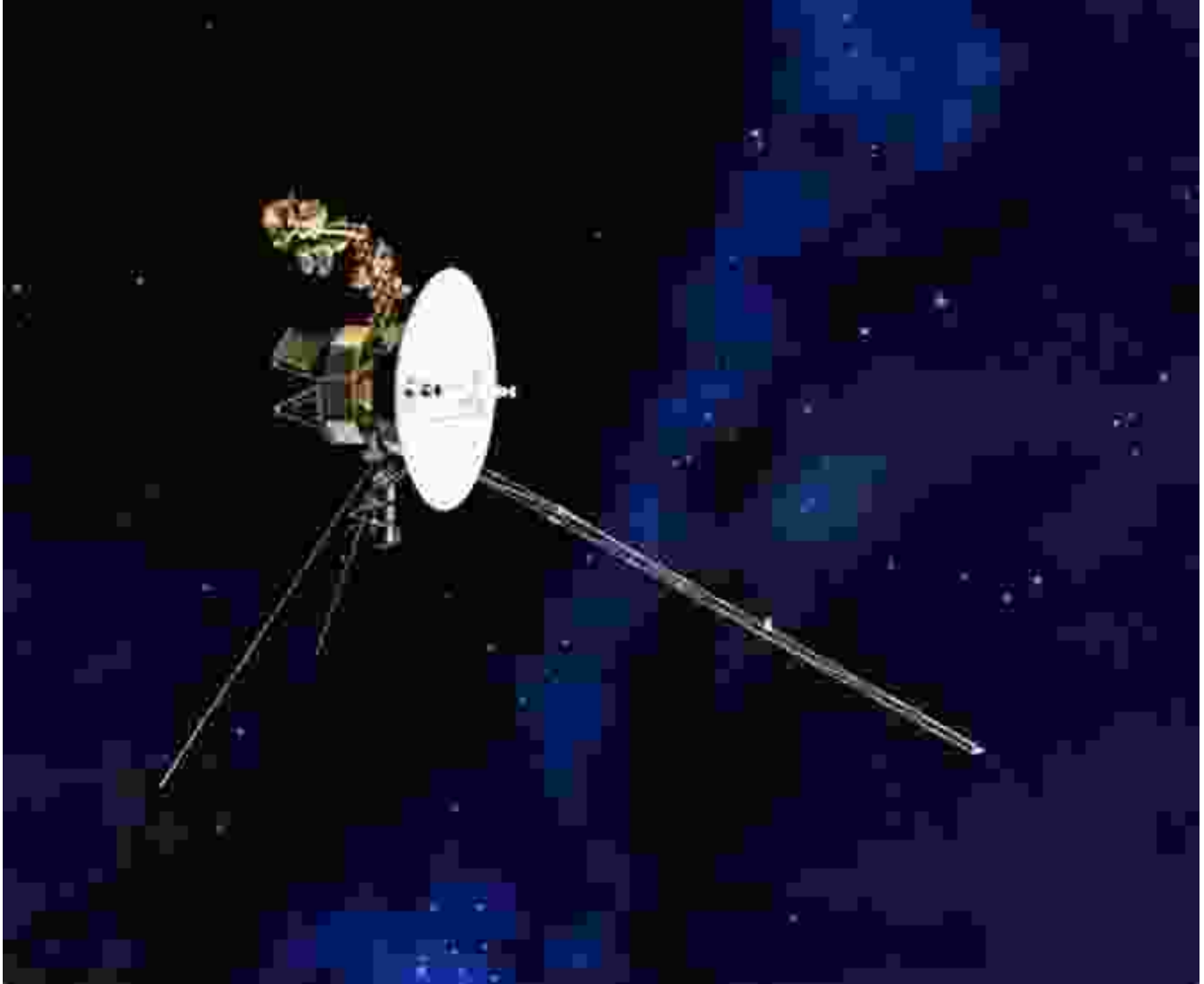
The Voyager probes are still operating today, and they are now in the outer reaches of the solar system. They are continuing to send back valuable data on the solar wind and the interstellar medium.

### **The Legacy of the Pioneer and Voyager Probes**

The Pioneer and Voyager probes have had a profound impact on our understanding of the outer solar system. They have revolutionized our understanding of the planets, moons, and other objects that make up our cosmic neighborhood, and they have helped us to understand our place in the universe.

The Pioneer and Voyager probes are a testament to the human spirit of exploration. They are a reminder that anything is possible if we have the courage to dream it and the determination to achieve it.





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