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NASA's Voyager Spacecraft: A Fact Sheet

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Summary

Voyager 1 and 2 are identical spacecraft that were launched in 1977 with the original mission of returning data from Jupiter, Saturn, and other planets as they flew past them. Their current mission is to extend NASA's exploration of the outermost edge of the solar system and the region where the sun's influence ends. In the 29th year after their 1977 launches, they each are much farther away from Earth and the sun than Pluto. This report is updated regularly.

History

Voyager 2 was launched on August 20, 1977, from Cape Canaveral, Florida aboard a Titan-Centaur rocket. On September 5, 1977, Voyager 1 was launched, also from Cape Canaveral aboard a Titan-Centaur rocket. Voyager 1 was put into a faster, shorter trajectory, so it reached Jupiter first and returned data about Jupiter and Saturn. Voyager 2 returned data about Jupiter, Saturn, Neptune, and Uranus. As identical spacecraft (**Figure 1**), their primary mission was the exploration of Jupiter and Saturn. After making a string of discoveries — such as active volcanoes on Jupiter's moon Io and intricacies of Saturn's rings — the mission was extended. Between them, Voyager 1 and 2 explored the four giant planets of the outer solar system, Jupiter, Saturn, Uranus, and Neptune; 48 of their moons; and the system of rings and magnetic fields those planets possess.

Figure 1. Voyager Spacecraft

Source: NASA at [<http://voyager.jpl.nasa.gov/spacecraft/index.html>]

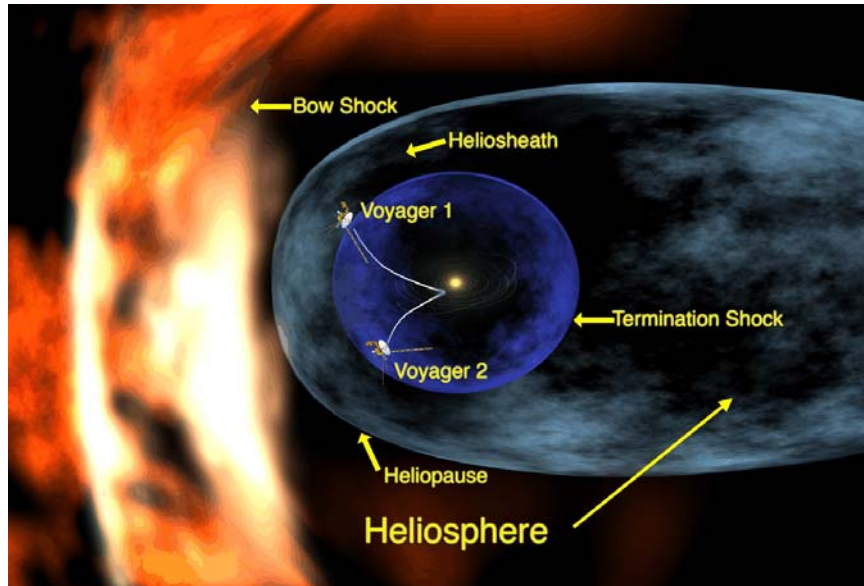
Current Status

NASA considered terminating the Voyager Interstellar Mission in 2005 because of a proposed budget reduction. The National Aeronautics and Space Administration Authorization Act of 2005 (P.L. 109-155) Section 304 required NASA to carry out an assessment of the costs and benefits of extending the date of the termination of data collection from the following missions: FAST, TIMED, Cluster, Wind, Geotail, Polar, TRACE, Ulysses, and Voyager. As a result of a Senior Management Review of the science value provided by each of these missions, NASA decided that the Voyager spacecraft should continue on their journey of exploration.

Both Voyagers continue to return data as they travel through the outer reaches of the solar system. The current mission of the two spacecraft, which costs about \$5 million annually, is designated as the Voyager Interstellar Mission (VIM). Its objective is to extend NASA's exploration of the outermost edge of the solar system and the region where the sun's influence ends. In the 29th year after their 1977 launches, both are much farther away from Earth and the Sun than Pluto. Voyager 1 as of August 15, 2006, was 100 astronomical units (AU) (9.3 billion miles) from the Sun — farther away than any human-made object has ever gone in space. Voyager 2, at 80 AU, is about six years behind. The Voyager probes are approaching the boundary region — the heliopause — where the Sun's dominance of the environment ends and interstellar space begins (**Figure 2**). Both spacecraft are still sending scientific information back to NASA's Deep Space Network (DSN). NASA believes both spacecraft will continue to operate and send back

valuable data until at least the year 2020 when the plutonium power source will run out. Detailed information on the Voyager spacecraft and their mission is available at [<http://voyager.jpl.nasa.gov/>].

Figure 2. Voyager Spacecraft Approaching the Heliopause



Source: NASA at [<http://voyager.jpl.nasa.gov/>]