

Calling Long-distance!

Did you know that NASA is still in touch with spacecraft it launched nearly 25 years ago? Voyager 1 and Voyager 2 took off into space way back in 1977. Now they're billions of miles away, traveling toward the outer reaches of our solar system.

The Deep Space Network (DSN) still talks to the two spacecraft every day. Using 70-meter (230-foot diameter) antenna dishes, messages between DSN and Voyager 1 take nearly 12 hours to travel at the speed of light, each way. To give you an idea of just how far away the two spacecraft are, sending a signal to the Mars Global Surveyor, in orbit around Mars, only takes around 15 minutes!

DSN uses groups of antennas in three locations around the world to talk to unmanned interplanetary explorers. One of the groups of antennas is in California's Mojave Desert; another is near Madrid, Spain. The third is near Canberra, Australia. The Deep Space Network sends commands and receives images and data. Of course, to do this, it must know exactly where the spacecraft is so it can point the antenna right toward it. DSN can also track how fast a spacecraft is going.

When Voyagers 1 and 2 were launched, their missions were to fly close by the Jupiter and Saturn planetary systems. Voyager 2 also flew by Uranus and Neptune. The two spacecraft were in great shape when they finished their primary missions in 1989. Scientists allowed them to continue making their way toward the outer boundary of the Sun's influence, called the heliopause.

Now Voyager 1 is the most distant human-made object in the Universe and Voyager 2 is the third most distant. (The second most distant is Pioneer 10, launched in 1972 to visit Jupiter.) DSN allows scientists to learn more about the two spacecrafts' journeys and what space is like so far away from the Sun. For more about the Deep Space Network, check out the Space Place at http://spaceplace.nasa.gov/dsn_fact1.htm.

This article was written by Eric Elkins and provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Image caption:

As Earth rotates, one of the three groups of antennas of the Deep Space Network can always be in contact with a spacecraft out in "deep space."

