NASA Retires First Data Relay Satellite After Stellar Career

WASHINGTON, /PRNewswire-USNewswire/ -- After a long and successful career providing communications support, NASA's groundbreaking Tracking and Data Relay Satellite (TDRS) 1 is retiring.

On Sunday, June 27, NASA shut down the satellite that launched into orbit during space shuttle Challenger's maiden voyage (STS-6) in April 1983. From 1983 to 1998, TDRS-1 provided NASA with the ability to communicate with other satellites in orbit. NASA reassigned TDRS-1 in 1998 to support the National Science Foundation's (NSF) U.S. Antarctic Program and others on scientific, educational and operational endeavors.

TDRS-1 worked with eight additional satellites to relay data and communications from more than 15 customers, including the NSF, the Hubble Space Telescope, the shuttle and the International Space Station. The TDRS system provides the capability not only to send commands and receive data, but also to navigate and talk with crews in orbit.

"TDRS-1 paved the way for this incredible space communications system," said Bill Gerstenmaier, associate administrator for NASA's Space Operations Mission Directorate. "The remaining TDRS satellites, and the new satellites that will be online within three years, will carry on these critical capabilities for many NASA missions, including science and human spaceflight."

TDRS-1 was the first satellite used to support launches from NASA's Kennedy Space Center in Florida in the early 1990s, returning real-time telemetry. It eliminated a dead zone over the Indian Ocean where there previously was no communication, providing full coverage for the space shuttle and low-Earth orbiting satellites.

TDRS-1 proved helpful during a 1999 medical emergency at the NSF's Antarctic Amundsen-Scott South Pole Station. The satellite's high-speed Internet connectivity allowed personnel to conduct telemedicine conferences. Doctors in the United States aided Dr. Jerri Nelson, who had breast cancer, in performing a self-biopsy and administering chemotherapy.

Later, in 2002, doctors used TDRS-1 to perform another telemedicine conference with the station to assist in knee surgery for a meteorologist. Because of its orbit, the satellite was able to link the North and South Poles and relayed the first pole-to-pole phone call. TDRS-1 also transmitted the first internet connection and live webcast from the North Pole and supported the first global television event from the South Pole Station - a worldwide television broadcast to commemorate the beginning of the year 2000.

TDRS-1 was instrumental in supporting innovative astronomy and astrophysics research programs at the South Pole Station, including the one-of-a-kind IceCube Neutrino Observatory and the South Pole Radio Telescope. The satellite transmitted gigabytes of science research data to university researchers worldwide on a daily basis. The first six TDRS satellites were built by TRW Inc. (now Northrop Grumman Corp.). Boeing Space and Intelligence Systems also built three TDRS satellites. NASA plans to launch two additional satellites into the Tracking and Data Relay Satellite System by 2013.

On June 13, 2010, the satellite arrived at its final destination, approximately 22,500 miles above the Earth. After the orbit is stabilized and the remaining fuel removed, NASA shut down the satellite on Sunday, June 27, 2010.