

National Aeronautics and
Space Administration



Launch Services Program
presents...

Tracking and Data Relay Satellite-K

TDRS-K

The Tracking and Data Relay Satellite-K (TDRS-K) Project is providing follow-on and replacement spacecraft necessary to maintain and expand space network communications. TDRS-K is scheduled for launch in 2012 aboard an Atlas V-401 launch vehicle.

The TDRS Project was established in 1973 and is responsible for the development, launch, and on-orbit test and calibration of TDRS spacecraft. There have been four procurements of TDRS spacecraft, which include the Basic Program (TDRS F1-F6), the Replacement Program (TDRS F7), the TDRS H, I, J Program, and the TDRS K/L Program. The first seven spacecraft (TDRS F1-F7) are referred to as first generation; the H, I, J series the second generation; and the K/L series the third generation. TDRS-K was built by Boeing Space Systems in El Segundo, Calif. TDRS F1-7 spacecraft were built by TRW (now Northrop Grumman) in Redondo Beach, Calif. The TDRS F8-10 (H, I, J) spacecraft were built by Hughes (now Boeing) in El Segundo, Calif.

The TDRS system (TDRSS), also referred to as the NASA Space Network, consists of the on-orbit telecommunications TDRS satellites stationed at geosynchronous stationary positions and the associated TDRS ground stations located at White Sands, N.M. and Guam. The TDRSS is capable of providing near continuous high bandwidth telecommunications services for low Earth orbit spacecraft and expendable launch vehicles, including the Hubble Space Telescope and the Space Station. TDRSS is a basic agency capability and a critical national resource.

Launch Vehicle
Atlas V-401

Launch Location
**Cape Canaveral
Air Force Station
Florida**

Launch Date
2012

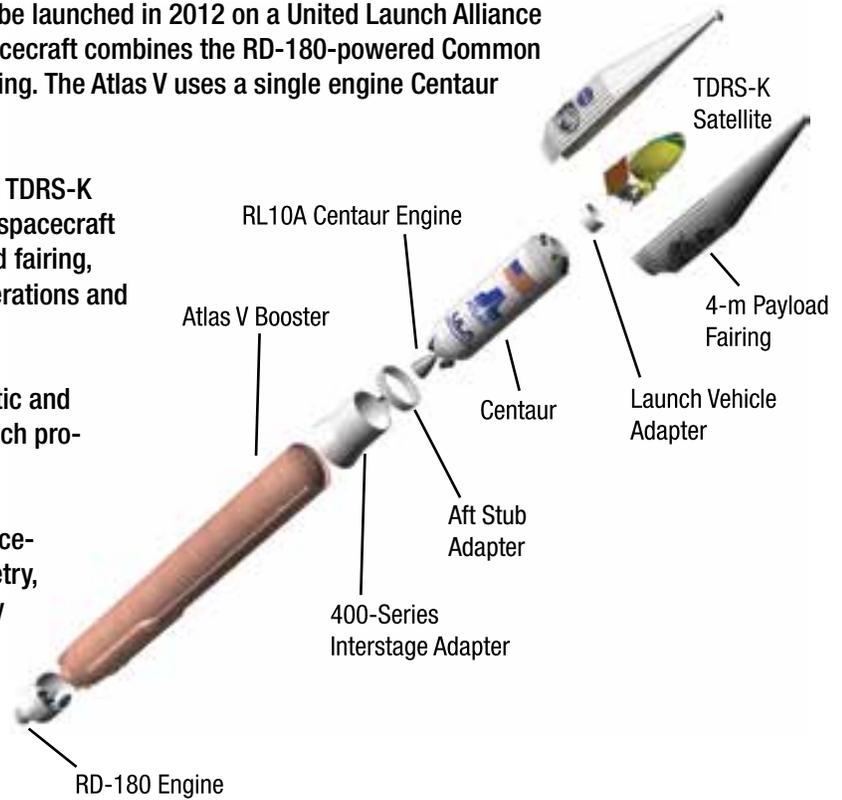
Tracking and Data Relay Satellite-K (TDRS-K)

The Tracking and Data Relay Satellite-K (TDRS-K) mission will be launched in 2012 on a United Launch Alliance Atlas V 401 rocket. The Atlas V that will launch the TDRS-K spacecraft combines the RD-180-powered Common Core Booster™ with a 13 feet (4 meter) diameter payload fairing. The Atlas V uses a single engine Centaur upper stage.

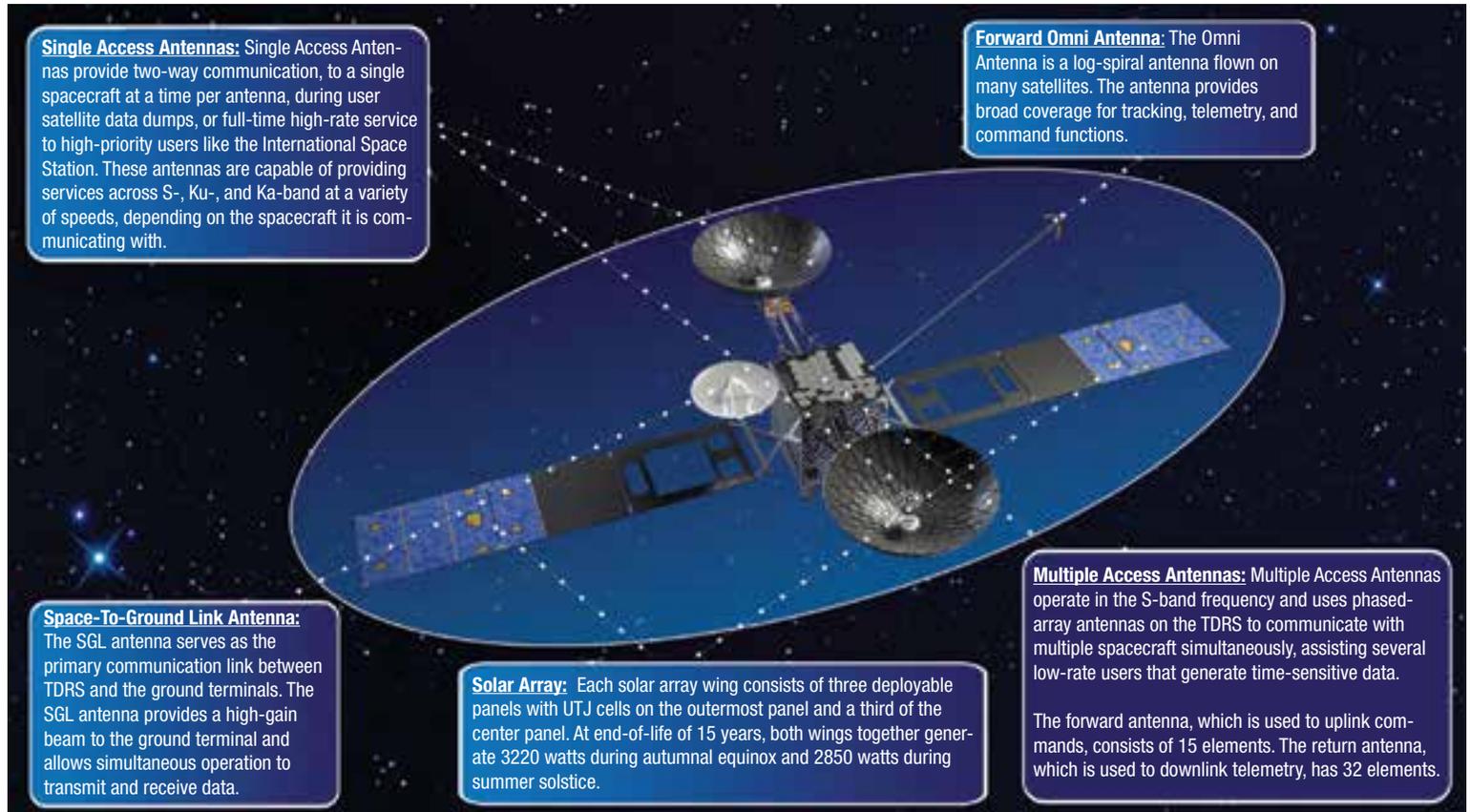
The primary interfaces between the Atlas V launch vehicle and TDRS-K spacecraft consist of the payload adapter, which supports the spacecraft on the launch vehicle and provides separation, and the payload fairing, which encloses and protects the spacecraft during ground operations and launch vehicle ascent.

The payload fairing provides thermal, acoustic, electro-magnetic and environmental protection for the spacecraft during the prelaunch processing operations, launch and ascent.

The Tracking and Data Relay Satellite System (TDRSS) is a space-based communication system used to provide tracking, telemetry, command and high bandwidth data return services to its many customers. A major component of the system is the TDRS spacecraft itself. Aboard each satellite are multiple antennae that send and receive signals to and from the ground to multiple satellites simultaneously. As a result, TDRS provides a wide variety of services to meet customers' needs and demands.



Drawing of Atlas V 401 rocket courtesy of: United Launch Alliance



Drawing of TDRS-K satellite in space courtesy of: Goddard Space Flight Center

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John F. Kennedy Space Center
Kennedy Space Center, FL 32899

www.nasa.gov

SP-2012-06-120-KSC