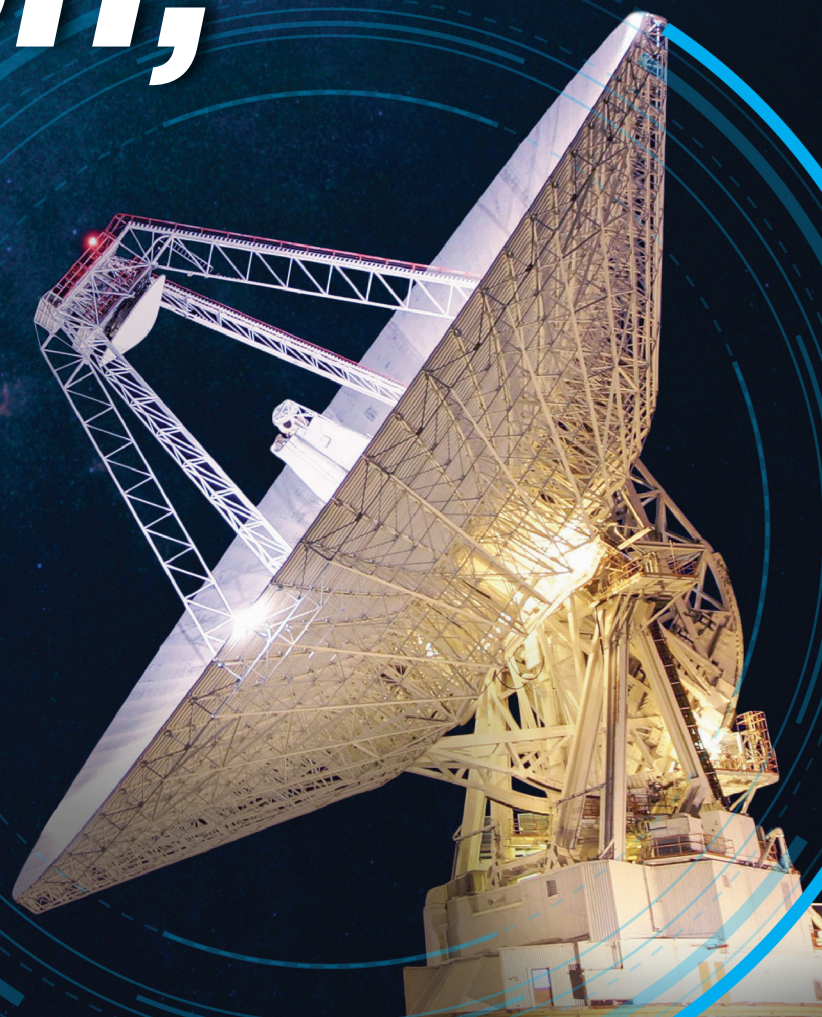
National Aeronautics and Space Administration

Exploration, enabled.

Space Communications and Navigation (SCaN)



www.nasa.gov

Space Communications

Exploration, enabled.

Space communication is critical to every NASA mission. Scientists, engineers, mission controllers, and astronauts depend on the reliable exchange of data between satellites in space and facilities on the ground.

Presently, more than 100 NASA and non-NASA missions rely on NASA Space Communications and Navigation (SCaN) to enable their success. Some spacecraft monitor Earth's weather and effects of climate changes, and others study the Sun's influence on our home planet. Some uncover untold mysteries of the Moon, while others peer back in time to understand the origins of the Universe.

ALASKA SATELLITE FACILITY
Fairbanks, Alaska

(BACK) TRACKING AND DATA RELAY SATELLITE (TDRS)

(FRONT) DEEP SPACE STATION (DSS-14)
Goldstone Deep Space Communications Complex

NASA Space Communications and Navigation (SCaN) manages the Near Space Network and the Deep Space Network. SCaN also ensures the availability and allocation of the radio frequency spectrum for all NASA programs. NASA missions rely on specific radio frequencies to communicate, navigate, and make scientific measurements in support of research and exploration.

SCaN is also responsible for developing an integrated space communications and navigation architecture to support exploration and science programs through 2040, as well as exciting new technologies that will make it possible. This roadmap will improve existing architecture and deploy future mission-enhancing capabilities such as space internetworking, optical and quantum communications.

The Near Space Network (NSN) contains a set of worldwide NASA and commercial ground stations providing two-way communications and ground-based tracking services to missions in low-Earth orbit (LEO) and High-Earth orbit (HEO) as far out as the Moon. The network also contains a constellation of geosynchronous satellites named the Tracking and Data Relay Satellite (TDRS) which can provide near-constant communication links between the ground and orbiting satellites.

The Deep Space Network (DSN) provides communications, tracking, and radio science services with missions that explore from beyond geosynchronous orbit to the other planets and into interstellar space. It consists of three ground station complexes spaced approximately equally around the globe so that at least one complex is always in view of distant spacecraft. The DSN also serves as a planetary radar and radio observatory for direct science measurements.

www.nasa.gov/scan

@NASASCaN