Jet Propulsion Laboratory
California Institute of Technology

Jet Propulsion Laboratory

The Jet Propulsion Laboratory is a unique national research facility that carries out robotic space and Earth science missions. JPL helped open the Space Age by developing the first Earth-orbiting science satellite, creating the first successful interplanetary spacecraft, and sending robotic missions to study all the planets in the solar system as well as asteroids, comets and Earth's moon. In addition to its missions, JPL developed and manages NASA's Deep Space Network, a worldwide system of antennas that communicates with interplanetary spacecraft.

JPL is a federally funded research and development center managed for NASA by Caltech. From the long history of leaders drawn from the university's faculty to joint programs and appointments, JPL's intellectual environment and identity are profoundly shaped by its role as part of Caltech.

Today JPL continues its world-leading innovation, implementing programs in planetary exploration, Earth science, space-based astronomy and technology development, while applying its capabilities to technical and scientific problems of national significance. JPL technology developed to enable new missions is also applied on Earth to benefit our everyday lives.

Facts about JPL

The Laboratory's core capability is to integrate science, engineering and technology that provide end-to-end implementation of space missions, through either use of its in-house experienced workforce or in collaborations with industry and academia.

JPL also applies its capabilities to national security in areas synergistic with its work for NASA, and develops technologies for uses on Earth in fields from public safety to medicine, capitalizing on NASA's investment in space technology.

Highlights at a glance:

- Designed, built and operated the United States' first satellite, Explorer 1, launched in 1958. Explorer 1 produced the first-ever scientific result from space: the discovery of the Van Allen Radiation Belts.
- Explored all of the solar system's planets, from Mercury to Neptune.
- Designed, built and operated all four of the successful rovers sent so far to the surface of Mars.
- In Earth science, pioneered radar scatterometry for ocean surface wind measurements, radar altimetry for sea surface height, synthetic aperture radar for natural hazard and solid earth applications, gravity measurements to characterize Earth's cryosphere and water cycle, and a number of spectrometer advances for atmospheric sounding and land surface measurements.
- Led development of space-based infrared astronomy with such missions as the Infrared Astronomical Satellite and the Spitzer Space Telescope.
- Developing technology projects such as advanced atmosphere entry systems, laser communication and cubesat-based investigations.
- Currently managing 20 spacecraft and eight major instruments conducting active missions.
- Annual budget for fiscal year 2018: $2.5 billion.
- Approximately 6,000 employees at JPL's 177-acre facility in the foothills of the San Gabriel Mountains near Pasadena, California.