The Pluto Sciencecraft will send back data which will allow scientists to construct a mosaic of the surface features of Pluto and Charon.

NEW TECHNOLOGIES

The current version of the spacecraft would weigh (at launch) about 100 kilograms (220 pounds), making it smaller than the first interplanetary spacecraft, Mariner 2, launched in 1962. The Galileo spacecraft now in orbit around Jupiter, has a mass of 2200 kilograms. Yet the Pluto Express on-board flight computer, reduced to about the size of a small cassette recorder, will have 20 to 50 times the processing speed of the Galileo computer.

Nearly every part of the spacecraft represents a new generation of technology. The craft that will travel to Pluto is no longer considered a spacecraft, but rather is now referred to as a Sciencecraft.

This vehicle will be unlike its predecessors, where science instruments were attached onto a spacecraft bus and interfaced with the main computer. On Pluto Express, there is no such distinction. The integrated sciencecraft will cost less, have lower mass, and be easier to operate from Earth than today's separate on-orbit science spacecraft, yet it will sample more closely every day, making possible the discovery of new planets and other space objects.

For further Pluto Express Information
Pluto Express Educational Outreach
Jet Propulsion Laboratory
4600 Oak Grove Drive, #301-160L
Pasadena, CA 91109

Internet http://www.jpl.nasa.gov/pluto/
email: pluto.education@jpl.nasa.gov
phone (818) 354-3812
fax (818) 393-3654

Curriculum Support materials are available from the Pluto Express Educational Outreach Program or through the Pluto Express Home Page.
Pluto is the smallest, outermost and last
discovered planet in the Solar System and the
only one that has never been visited by a
spacecraft from Earth. Pluto and its relatively
large satellite Charon are the destinations of
a proposed Sciencecraft mission for the next
decade, being developed for NASA by
scientists and engineers at NASA’s Jet
Propulsion Laboratory (JPL). In the proposed
mission, two lightweight Sciencecraft would
be launched separately on trajectories to
reach the Pluto-Charon system in about 3
years.

The mission to Pluto
represents not only
innovation in technology
and science, but a challenge
to our imaginations as well.
Students, teachers,
engineers, and scientists
are collaborating in this
exciting endeavor.

The Sciencecraft integrates science objectives and engineering
constraints to create a highly efficient spacecraft based on the
need to take measurements with sophisticated sensors that
probe the visible, infrared, ultraviolet, and radio regions of the
electromagnetic spectrum. Scientific objectives for Pluto
Express include global geological and chemical mapping of
Pluto and Charon and study of Pluto’s atmosphere. Mission
designers will seek a possible extended mission to explore
newly discovered bodies in the Kuiper Disk beyond Pluto. This
will help us understand more about the structure and early
history of our Solar System.

Near their
closest
approaches to
Pluto, the
Sciencecraft
will pass
behind Pluto
(as seen from
Earth) to use
the radio signal
to study the
planet’s
atmosphere.
We don’t know
what we will
discover upon
arrival, but this
promising
enhanced view of
report
Hubble photos
shown above
could give us a
hint of
suggestive
color region
and unimagined
features that
would be
exciting to
explore.