

New Horizons/SDC

The Student Dust Counter



(Courtesy NASA/JPL)

New Horizons is the first mission in NASA's New Frontiers Program and, in 2015, it will conduct a five-month-long flyby study of Pluto and its moons, Charon, Nix, and Hydra.

Frequently Asked Questions

What is the purpose of New Horizons?

New Horizons' core science goals reflect what the science community has wanted to learn about Pluto for the past two decades. The craft will map the surfaces of Pluto and its moon Charon with an average resolution of one kilometer. It will map the surface composition across the various geological provinces of the two bodies and will determine the composition, structure and escape rate of Pluto's atmosphere.

What is the SDC and what does it measure?

The Venetia Burney Student Dust Counter (SDC) is an impact-based dust detector designed to map the size and spatial variability of interplanetary dust during its fourteen-year journey across the Solar System. It consists of fourteen polarized detectors that register a charge when impacted by hypervelocity dust grains. Designed, built, tested, and now operated by University of Colorado students, the SDC is the first student-built instrument ever to fly on a NASA planetary mission and is the first dust detector to take measurements of dust distribution beyond 18 Astronomical Units (AU).

Why is it important to measure dust?

Dust in space gives scientists clues to processes throughout the Solar System and the galaxy. Dust grains are generated by several

Quick Facts

Launch date: January 19, 2006

Launch location: Cape Canaveral Air Force Station, Florida

Launch vehicle: Atlas V-551

Mission target: Flyby of Pluto, its moons, and possibly several other Kuiper belt objects.

Primary duration: Ten years to Pluto

Project description: New Horizons is designed to help us understand worlds at the edge of our solar system by making the first reconnaissance of Pluto and its moons.

LASP provides:

- The Student Dust Counter (SDC) instrument
- SDC Principal Investigator, Mihály Horányi

Other organizations involved:

- Southwest Research Institute
- Johns Hopkins University's Applied Physics Laboratory

processes; studying these grains can give scientists clues about how the Solar System was formed billions of years ago and how it works today. These observations will advance our understanding of the origin and evolution of our own Solar System, as well as helping scientists study planet formation in dust disks around other stars.

To read more about the SDC instrument, visit:

<http://lasp.colorado.edu/home/missions-projects/quick-facts-sdc>.

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