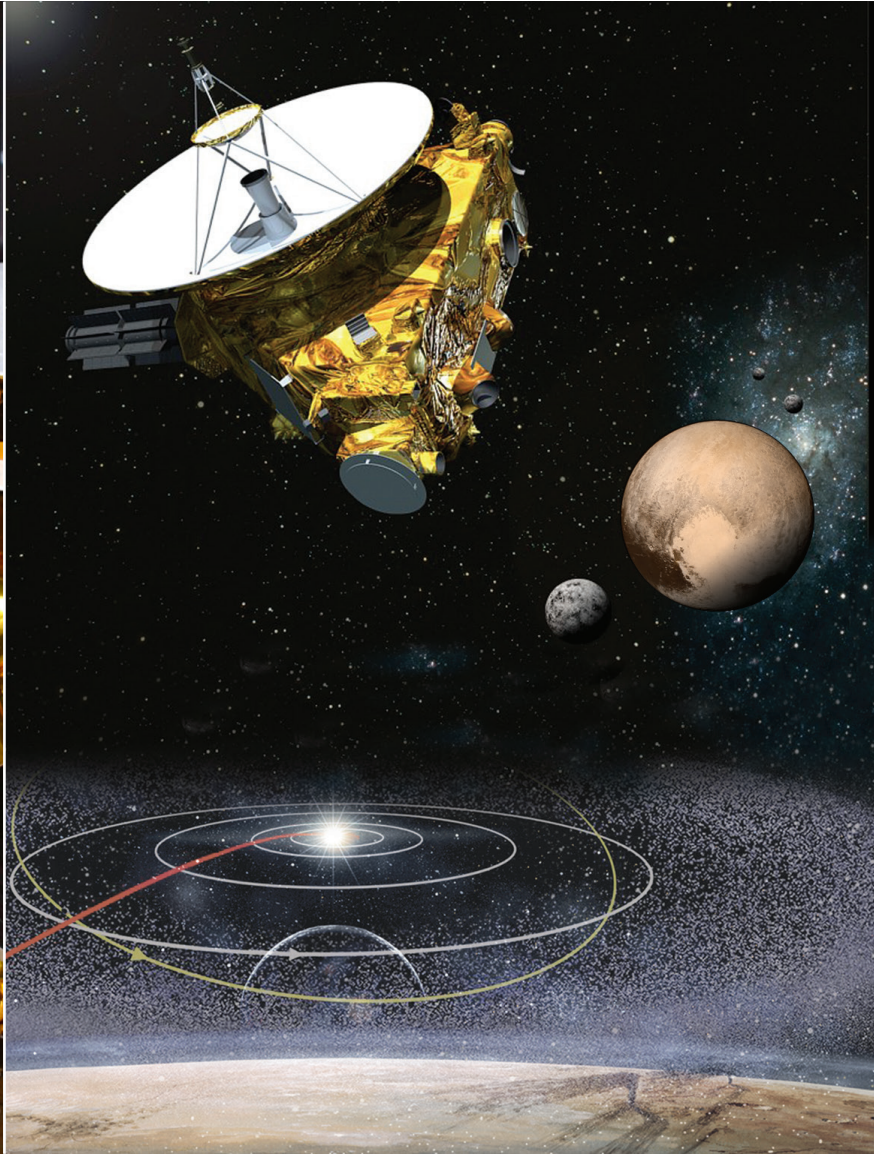
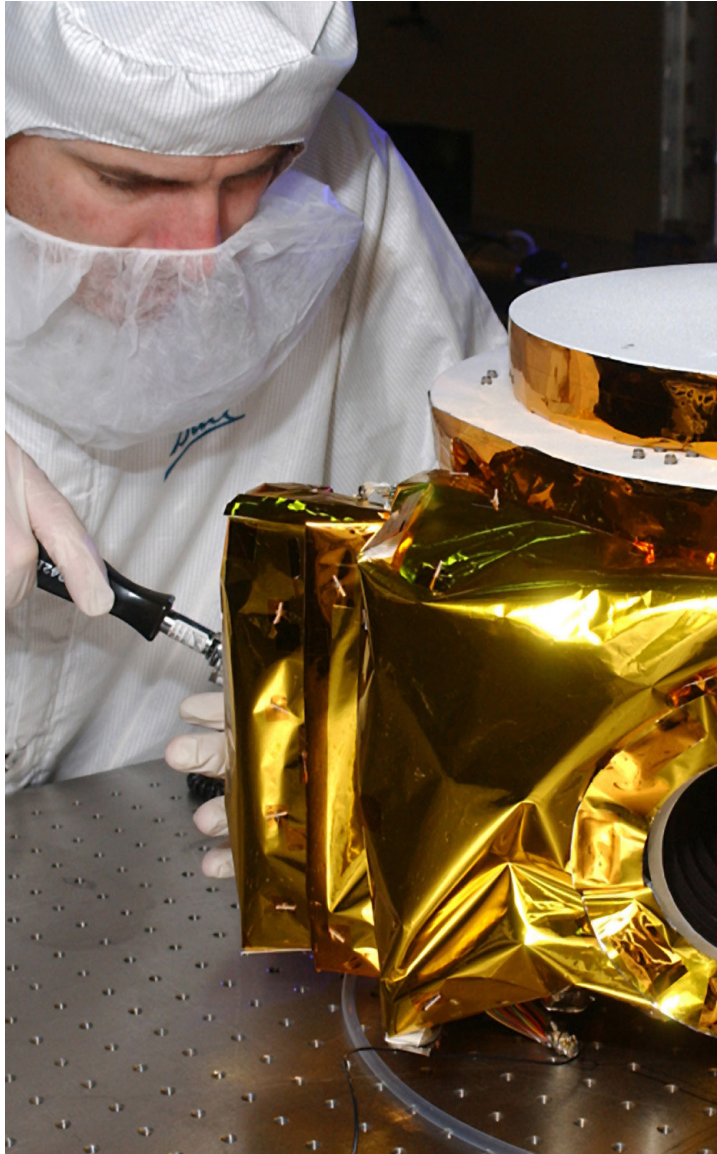


RALPH – NEW HORIZONS



GO BEYOND WITH BALL.®

We helped capture images of Pluto during the closest encounter with the dwarf planet the human race has ever achieved. Flying aboard the New Horizons spacecraft, the Ball Aerospace Ralph instrument served as the “eyes” of the mission during NASA’s historic rendezvous with Pluto.

OVERVIEW

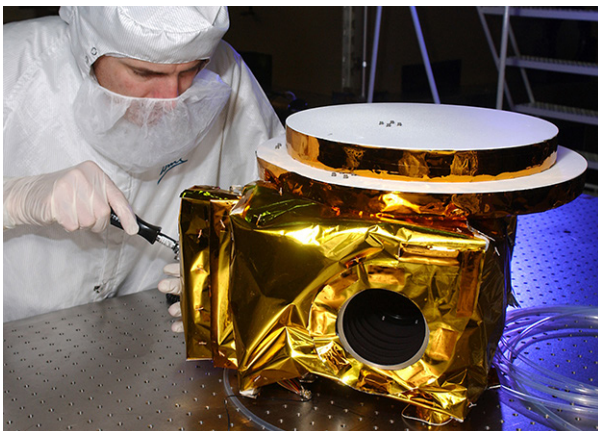
Ralph is one of seven instruments that captured images of Pluto during the closest encounter with the dwarf planet the human race has ever achieved. Flying aboard the New Horizons spacecraft, Ralph served as the “eyes” of the mission during NASA’s historic rendezvous with Pluto in 2015.

Ralph has traveled farther than any instrument ever built by Ball Aerospace. The three billion mile journey to help explain the origins of the outer solar system and how planet–satellite systems evolve began in January 2006. The New Horizons spacecraft arrived on Pluto’s doorstep more than nine years later, on July 14, 2015. Since then, the New Horizons mission continues to shed light on some of the most distant worlds in our solar system.

OUR ROLE

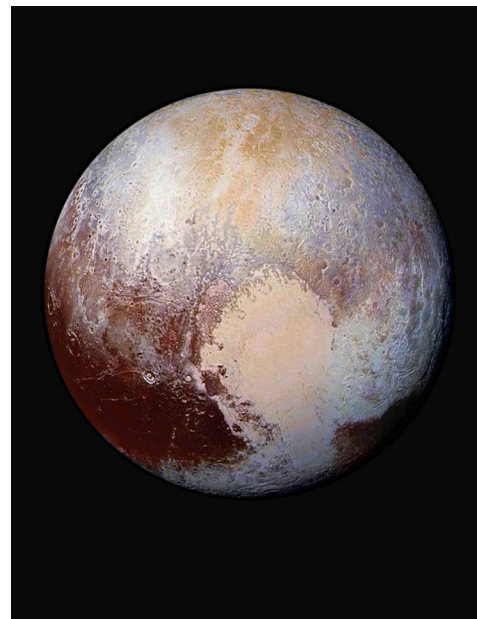
The Ball-built Ralph is the spacecraft’s mapping instrument. It creates composition and temperature maps of the surfaces of Pluto, its moons, and Kuiper Belt objects. Ralph has provided color and black-and-white maps of Pluto’s surface and temperature and identified surface areas where nitrogen, methane, carbon monoxide, water and other materials exist on the planet. Equipped with a powerful visible imager and an infrared spectrometer, Ralph’s resolution is about 10 times better than the human eye and uses less than half the power of a child’s nightlight. Ralph is paired with the mission’s ultraviolet spectrometer called Alice, named for the colorful Kramden characters on the 1950s television show, “The Honeymooners.”

Ball’s Ralph instrument



QUICK FACTS

- Ralph weighs only 23 pounds and uses less than seven watts of power
- Ball built the Ralph instrument in just 22 months
- The three billion mile journey to Pluto took nine and a half years
- Scientists estimate Pluto is slightly larger than expected – retaining its title of “King of the Kuiper Belt”
- Pluto’s heart-shaped feature revealed in July 2015 is named Tombaugh Regio after Clyde Tombaugh, the discoverer of Pluto
- Images from the flyby reveal Pluto’s varied landscape, including frozen lakes, mountains and flat plains
- The mission was a joint project of Southwest Research Institute, Ball and NASA’s Goddard Space Flight Center



The high-resolution enhanced color view of Pluto taken by Ralph