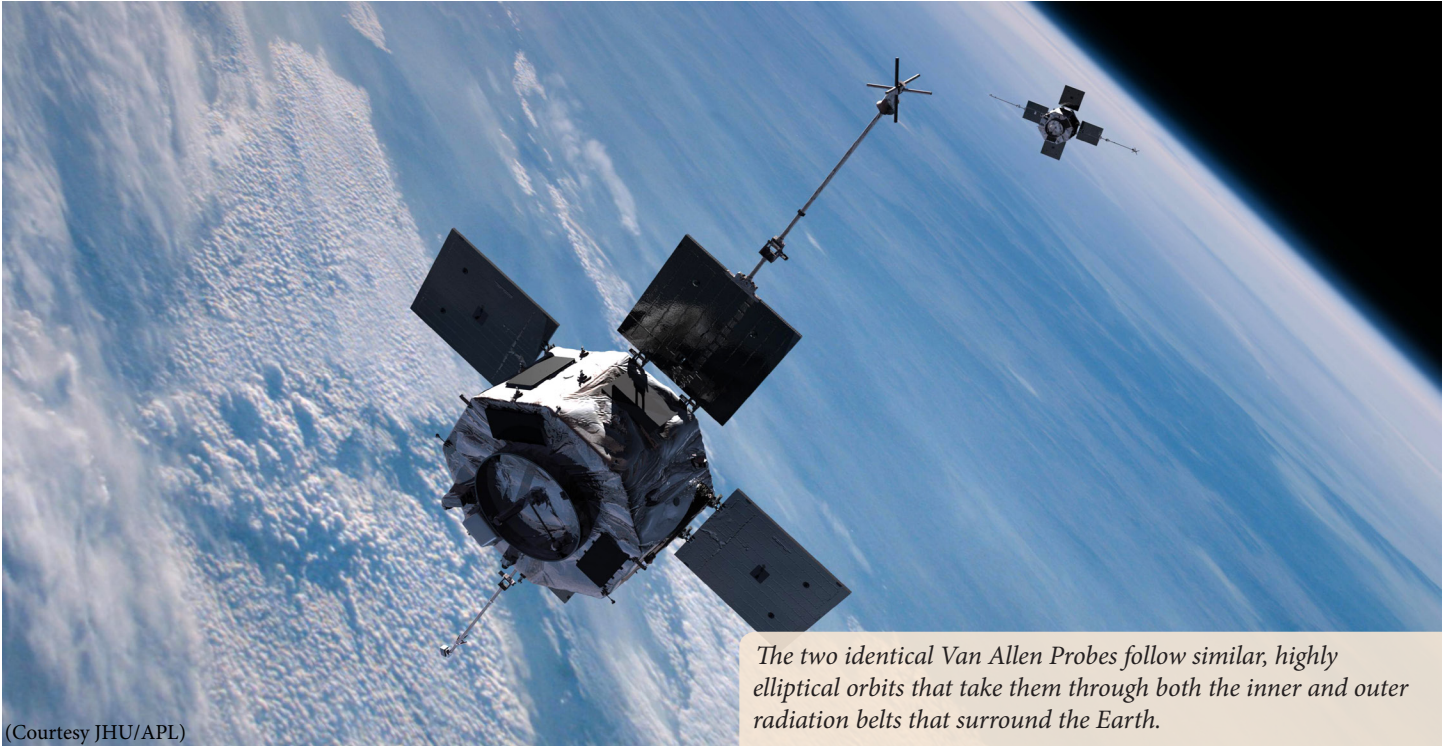


Van Allen Probes



The two identical Van Allen Probes follow similar, highly elliptical orbits that take them through both the inner and outer radiation belts that surround the Earth.

Frequently Asked Questions

What is the purpose of the Van Allen Probes?

The Van Allen Probes mission, previously known as the Radiation Belt Storm Probes (RBSP) mission, is part of NASA's Living With a Star Geospace program to explore fundamental processes that operate throughout the solar system, in particular those that generate hazardous space weather effects near the Earth and phenomena that could affect solar system exploration.

What does the REPT instrument measure?

REPT is part of the Energetic Particle, Composition, and Thermal Plasma Suite, which directly observes near-Earth space radiation particles to understand the physical processes that control the acceleration, global distribution, and variability of radiation belt electrons and ions. REPT measures the challenging electron range of 4-10 MeV and proton range of 20-75 MeV to capture the most intense events.



(Courtesy LASP)

What are the expected outcomes from the mission?

The science objectives of the Van Allen Probes mission are to:

- Discover which processes, singly or in combination, accelerate and transport radiation belt electrons and ions

Quick Facts

Launch date: August 30, 2012

Launch location: Cape Canaveral Air Force Station, Florida

Launch vehicle: Atlas V-401

Mission target: Earth orbit

Primary duration: 2 years; currently extended through 2017

Project description: The Van Allen Probes mission is enabling scientists to understand the sun's influence on the Earth and near-Earth space by studying the planet's radiation belts on various scales of space and time.

LASP provided:

- The Relativistic Electron Proton Telescope (REPT) for the Energetic Particle, Composition, and Thermal Plasma Suite
- The Digital Fields Board for the Electric Field and Waves Suite

Other organizations involved:

- NASA's Goddard Space Flight Center
- Johns Hopkins University's Applied Physics Laboratory
- University of California, Berkeley

- Understand and quantify the loss of radiation belt electrons and determine the balance between competing acceleration and loss processes
- Understand how the radiation belts change in the context of geomagnetic storms

To read more about the Van Allen Probes mission, visit:

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

The Laboratory for Atmospheric and Space Physics (LASP) combines all aspects of space exploration through our expertise in science, engineering, mission operations, and data management. As an institute at the University of Colorado Boulder, LASP includes students throughout our activities. Learn more at <http://lasp.colorado.edu>.