RBSP MISSION MEDIA MESSAGES
& Three Questions, One Answer

Mission Tagline:

"Exploring the Extremes of Space Weather"

Key Messages:

1. RBSP advances our understanding of the dramatic and puzzling aspects of Earth's radiation belts. The "Van Allen Belts," named for their discoverer, James Van Allen, are two donut-shaped regions encircling the Earth, where high-energy particles are energized and trapped by our planet's dynamic magnetic field.

2. RBSP enables the prediction of extreme and dynamic space conditions. Changes in the sun's energy flow cause changes in Earth's space environment. These changes are referred to as space weather and have broad impacts on Earth's systems and inhabitants.

3. RBSP provides understanding needed to design satellites to survive in space. RBSP will explore space weather, and especially its extreme conditions, all of which can disable satellites, cause power grid failures, and disrupt GPS services.

RBSP Mission Secondary Messages:

- Beginning in 2012, the two RBSP spacecraft will orbit the Earth, sampling the harsh radiation belt environment where major space weather activity occurs and many spacecraft operate.
- The RBSP mission will provide unprecedented insight into how Earth's radiation belts change over both space and time.
- RBSP data will be used by engineers to design radiation-hardened spacecraft and will enable forecasters to predict space weather events in order to alert astronauts and operators of space-borne and ground-based technologies to potential hazards.
- Most spacecraft in Earth orbit operate within the radiation belts. During intense space weather storms, sensitive electronics can be damaged. The RBSP spacecraft are built specifically to withstand these storms with instruments that are "hardened" to continue working even in the harshest conditions.
- By studying particle acceleration within the radiation belts, RBSP provides insight into particle acceleration processes that occur in many places within our solar system, galaxy and universe.
- RBSP will join the Solar Dynamics Observatory (SDO), which launched in 2010. Together they will explore space weather its extreme conditions – SDO monitoring the solar conditions, and RBSP watching the reaction of the radiation belts.
- RBSP is the second mission to be launched for NASA's Living With a Star Program. The goal of the LWS Program is to develop the scientific understanding necessary to address those aspects of the sun and solar system that directly affect life and society.

Living With a Star Program Message:

Living With a Star (LWS) emphasizes the science necessary to understand those aspects of the sun and space environment that most directly affect life and society. LWS missions target the linkages across the interconnected system with an ultimate goal of enabling a predictive understanding of the system. The first LWS mission, Solar Dynamics Observatory (SDO), was launched early in 2010. RBSP, scheduled for launch on August 23, 2012, is the second LWS mission and will work with SDO. Concurrently with RBSP, the Balloon Array for Radiation-belt Relativistic Electron Losses (BARREL) will – beginning in late 2012 and continuing into 2014 – measure the high-energy particle precipitation from the radiation belts into Earth's atmosphere. The LWS Program Executive is at NASA HQ; there are LWS Program Managers at NASA HQ and NASA GSFC.

Mission boilerplate:

The Radiation Belt Storm Probes mission is part of NASA's Living With a Star program, which is managed by Goddard Space Flight Center in Greenbelt, Md. The Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, Md., manages the mission and is building and will operate the RBSP spacecraft for NASA.

(to be added as appropriate)
Instruments on the spacecraft are provided by the University of New Hampshire (UNH), University of Iowa (UI), University of Minnesota (UM), New Jersey Institute of Technology (NJIT), and the National Reconnaissance Office (NRO).

RBSP: Three Potential Questions, One Answer

“Is this mission really worth $700 million?”
“Why should we care about the radiation belts?”
“Can’t you study this from Earth for a lot cheaper?”

To get where humankind wants to go in the next 50 years, the next 100 years, we really need to understand how the Earth’s radiation belts behave. And we need to go up there, into the heart of the radiation belt storms, to do that.

RBSP’s data will lead to improved satellites, better navigation and communications, successful manned missions to the moon and Mars and asteroids and beyond.

And we’ll also understand our universe better.

That’s what RBSP will do.

Our modern societies have invested many trillions of dollars into technologies both here on Earth and in space that are affected by radiation belt storms. The data from RBSP is going to make all of those technologies, including manned spaceflight, more safe and effective. Cell phones, GPS, communications, even power grids – everything we rely on today to talk, to navigate, to flourish – will work better, and be better protected, once we understand the radiation belts better.

We need to go into space – and we need two spacecraft – to do this. We have to go into the heart of the radiation belt storms to study what makes them tick, and we need two eyes to see what’s there. We’re not using cameras or telescopes; we’re using particle detectors, and electric field and wave detectors, and all sorts of very special instruments to study these critical regions of space.