

# WHY SUPPORT RESEARCH AT NASA?

**SO YOU CAN HELP SCIENTISTS UNDERSTAND WHAT PROTECTS US FROM COSMIC RADIATION, ILLUMINATE THE EARTH'S MAGNETIC FIELDS, AND FOSTER SUSTAINABILITY PRACTICES IN DEVELOPING COUNTRIES.**

And that's just for starters. Through \$12.8 million in research grants, Boston University has been helping the National Aeronautics and Space Administration (NASA) understand the universe, our planet, and ourselves a little better.

## ■ LIVING IN A BUBBLE

We're all living in a bubble. The whole planet. The entire solar system, in fact. Astrophysicists believe this bubble, called the heliosphere, zooms through the universe along with the sun, protecting us from deadly cosmic rays from deep space. But how big is this heliosphere and what is its shape? Thanks to NASA funding, Boston University astrophysicist Merav Opher is leading a center called SHIELD to answer those questions and more. Comprising experts she recruited from 11 other universities and research institutes, Opher and her team will develop a predictive model of the heliosphere, and help scientists better understand what exactly is keeping us alive.

## ■ MOON SHOT

When it comes to the Earth's magnetic field, BU space scientist Brian Walsh takes the wide view. And that means shooting from 240,000 miles away. Walsh is developing an X-ray imager that will be rocketed to the moon aboard a NASA lunar lander. The device is designed to image the breadth of our magnetosphere and reveal how our planet's magnetic fields interact with solar winds, among other things. "We've never had a full view of the Earth's magnetosphere or known if it changes with time or even if it has holes in it," Walsh says. "We haven't had a wide enough view of our planet to take those kinds of images before."

## ■ CHANGING THE FORECAST FOR FLOOD-PRONE AREAS

Certain regions in Africa face more and more disastrous flooding, followed by extreme droughts, leaving significant economic and public health impacts in their wake. Enhanced remote sensing could make a big difference. NASA has awarded Pontus Olofsson, an associate professor in the Department of Earth and Environment, a research grant to team up with SERVIR, a joint venture between NASA and the US Agency for International Development, to improve environmental decision-making in underresourced countries in western Africa. Using satellite-based Earth monitoring and geospatial information, Olofsson will focus on how this data can better inform decision-making related to sustainability, climate change, and land use. When it comes to climate change, knowledge is not only power but survival.

---

**We hope you'll give strong consideration to supporting research funding for NASA. If you have any questions or would like to discuss the role that NASA research plays in our daily lives, please visit [bu.edu/federal](https://bu.edu/federal).**



A BOSTON UNIVERSITY RESEARCHER WILL SHOW US NEVER-BEFORE-SEEN IMAGES OF EARTH'S MAGNETOSPHERE.