Sun-Earth Day Mission Highlights:

Interview with Roy Tobert

[Opening Sound Clip]

[Troy Cline]
Although our technologies have changed over time, our goal **to understand the Sun**…remains the same.

[Sound clip]
My name is Troy Cline and welcome to Sun-Earth Day 2011: Ancient Mysteries-Future Discoveries. This new theme opens the door to a variety of topics ranging from ancient solar sites and discoveries to current and future discoveries. Many of these new discoveries involve NASA missions that, when combined, tell an even greater story of our dynamic solar environment.

[Music Transition]

Energy. It can be solar energy or electrical energy; magnetic energy or the energy of movement. Different kinds of energy can switch from one form into another and today we're talking to Roy Torbert who studies how that happens in the magnetic fields that surround Earth. Torbert is a physicist at the University of New Hampshire who says that the energy in Earth's atmosphere can cause auroras and magnetic storms. He is involved with the Magnetospheric Multiscale Mission which will launch in 2014 to learn more about this phenomenon.

[Roy Torbert]
My part is to direct the suite of instruments that measures the electromagnetic fields. Which is a key element in understanding the science of MMS which is the way magnetic fields are basically annihilated, release their energy to particles or matter in the form or either pros or aspros. Most people would be very interested in forms of energy, the kind of energy, and the ways in which our society continues to use energy and stores energy. By the way it can do that actually even in things like generators and appliances, it creates magnetic energy with a thing called a generator or dynamo. It dissipates it in things like all the earth sciences like resistors or toasters. In this particular case, it is interesting, that the same process works in plasmas. Like in Fusion sheaths, and in most universal efforts like black-holes and nearby stars.

[Troy Cline]
Torbert is the lead on an instrument to measure the electric and magnetic fields around Earth.

[Roy Torbert]
Yes, we measure electric fields in plasmas and magnetic fields in plasmas, with a set of very precise instruments that are specialized because plasmas are very clean, not much material at all. Which means when you put such instruments in there you know naturally or in evidently that you will disturb the environment you are trying to measure. Our major effort is to develop probes that will disturb the environment as little as possible.

[Closing]
I'd like to thank Roy Torbert for talking to us today and look forward to future interviews with people involved with the MMS mission.

As many of you already know, every year we update our Sun-Earth Day resources for educators, museums, community groups and amateur astronomers. We also collect a variety of additional hard copy educational resources that are placed in a beautiful and new Sun-Earth Day folder. If you haven't already, I'd like to remind you to register on the Sun-Earth Day website in order to receive your FREE folder of materials while supplies last.

I'm excited to announce the release of a new mobile version of NASA's Space Weather Viewer! This app is an adaption of the current Space Weather Media Viewer and features near-real-time imagery from a wide variety of NASA missions, as well as video interviews with prominent scientists about the causes of space phenomena and NASA-created visualizations. You can download the app by doing a search in iTunes for the 'NASA Space Weather Media Viewer'. After downloading the app, we would really appreciate seeing your reviews and comments!

I hope you enjoyed this Sun-Earth Day Highlights podcast. We are very interested in hearing your questions and comments. If you have something to say, just join us in Facebook or send an email to sunearthday@gmail.com . If selected we'll share it on one of our upcoming podcasts!

For all other details about the Sun-Earth Day program including information about our past SED themes be sure to visit our website at sunearthday.nasa.gov.
While there, don't forget to register in order to receive Sun-Earth Day updates!

You can learn more about NASA by simply visiting www.nasa.gov .