

## Dr. William Cheng and Dr. Lisa Hardaway

### Instruments and Images on New Horizons: The Long Range Reconnaissance Imager (LORRI) and Ralph

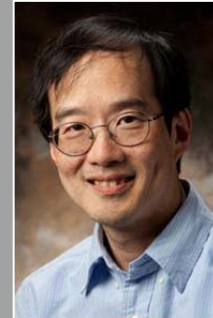
#### ABSTRACT

Pluto and its five known moons have been transformed from mysterious, barely resolved or unresolved points of light, only dimly viewed from very far away, to astonishing worlds of unimagined complexity by the recent visit of the small interplanetary probe called New Horizons. Pluto, with its icy plains, mountains, flowing glaciers, and hazy atmosphere, and Charon, only half as large but dramatically different, are revealed in amazing detail by the instruments on New Horizons. This talk will present the two imaging instruments on New Horizons, the Long Range Reconnaissance Imager (LORRI) and Ralph (just a name, not an acronym) and what they saw in the Pluto system.

#### SPEAKER BIOGRAPHIES

**Dr. Andrew Cheng** is the Chief Scientist in the Space Department at the Johns Hopkins University Applied Physics Laboratory, which designed, built, operates, and manages the New Horizons probe for NASA. He is also the Principal Investigator for the long-range imaging camera on the New Horizons mission to Pluto and the Kuiper Belt and for the Balloon Observation Platform for Planetary Science (BOPPS). Previously, Dr. Cheng served as Deputy Chief Scientist for Space Science in the Science Mission Directorate at NASA headquarters from 2007-2008. He was the Project Scientist for the Near Earth Asteroid Rendezvous mission, which was the first mission to orbit and land a spacecraft on an asteroid. He is a Fellow of the American Physical Society. He has served as a journal editor for professional journals and has served on various advisory boards for NASA and the National Research Council.

**Dr. Lisa Hardaway** is the Ralph Program Manager at Ball Aerospace. She is also the High Accuracy Star Tracker (HAST) and Space-Based Infrared Systems (SBIRS) Program Manager. Dr. Hardaway began her work as a mechanical engineer on the Ralph instrument in 2003 and quickly advanced to become the lead systems engineer. She was promoted as Ralph program manager in 2006, leading all subsequent support operations for the instrument over its 9.5-year flight to Pluto. Dr. Hardaway also served as the technical lead for the Navigation Sensor Suite program at Ball supporting NASA's Orion missions. She led the Wide Field Camera 3 (WFC3) program, one of the last instruments installed in the Hubble Space Telescope during the final servicing mission in 2009. She is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and is a member of AIAA's Structures Technical Committee. She is a member of the American Astronomical Society (AAS) and serves on the University of Colorado's External Advisory Board.



#### EVENT DETAILS

**DATE:**

Wednesday, October 21st

**TIME:**

6:00 -8:00PM

**LOCATION:**

Stevens Institute of Technology  
Suite G-17  
The Ronald Reagan Building  
1300 Pennsylvania Avenue, NW  
Washington, DC 20004

**RSVP:**

202-567-6380 or  
dcops@stevens.edu