Graduate Program in Planetary Sciences at the University of Colorado

PLANETARY RESEARCH. Research in planetary sciences is centered largely within the Laboratory for Atmospheric and Space Physics and includes a combination of theoretical, laboratory, spacecraft hardware, telescopic, and data analysis approaches to understanding the current state and evolution of planets and planetary systems. Specific research areas include the formation and dynamical evolution of planetary systems, terrestrial-planet atmospheres, surfaces, and interiors, outer-solar-system atmospheres and satellites, planetary rings, dusty plasmas, magnetospheres, and solar-wind interactions.

FLIGHT MISSIONS. Active planetary spacecraft are carrying two LASP-built instruments – the Ultraviolet Imaging Spectrograph on Cassini at Saturn and the MASCS ultraviolet-to-infrared spectrometer on MESSENGER en route to Mercury – and an instrument to study the interplanetary dust environment has been delivered for the upcoming New Horizons mission to Pluto. Colorado faculty also are involved in numerous other instruments and missions, including building and managing the $485 million Mars Atmosphere and Volatile Evolution (MAVEN) mission to Mars.

ASTROBIOLOGY. Colorado has a multi-institutional astrobiology program designed to understand the potential and actual distribution of life in the universe. Participants include faculty and students from astrophysics, planetary science, geology, atmospheric science, molecular biology, evolutionary biology, biochemistry, chemistry, and the humanities.

GRADUATE PROGRAM. Graduate students are active in all aspects of our research programs. Faculty and students reside in one of several appropriate departments, including Astrophysical and Planetary Sciences, Geological Sciences, Physics, and Atmospheric and Oceanic Sciences; prospective students can apply through any of these departments. There are over 30 graduate students in planetary science, doing cutting-edge research that spans the breadths of disciplines.

PLANETARY RESEARCHERS:

Nicole Albers
Phil Armitage
Fran Bagenal
Dan Baker
John Bally
Annamaria Cereti
Peter Delamere
Gaetano Di Achille
Bob Ergun
Larry Esposito
Xiaohua Fang
Eberhard Gruen
Greg Holsclaw
Mihaly Horanyi
Brian Hynek
Bruce Jakosky
Makenzie Lystrup
Bill McClintock
Tom McCollom
Mike Mellon
Steve Mojsis
Keiji Otsuki
Nick Schneider
Miodrag Sremcevic
Mindi Sears
Zoltan Sternovsky
Glen Stewart
Ian Stewart
Alexis Templeton
Feng Tian
Brian Toon
Shijie Zhong

Saturn ultraviolet observations
Protoplanetary disks and planet formation
Planetary magnetospheres
Earth/planet magnetospheres
Observations of star and planet formation
Mars radar properties
Earth and planetary space physics
Mars hydrology
Earth/planet magnetospheres
Planetary rings, outer solar system
Sun-Planet interactions
Planetary physics and interplanetary dust
Planetary Spectroscopy
Solar-system dusty plasmas
Mars geology and geophysics
Mars habitability, astrobiology
Planetary auroras and instrumentation
Flight instrumentation, Mercury
Earth and planetary biogeochemistry
Mars surface properties and ice geophysics
Early Earth history
Dynamics and rings
Jupiter magnetosphere, Io
Saturn moons and rings
Mars geomorphology and geophysics
Dusty plasmas
Planetary formation and dynamics
Aeronomy and Cassini data analysis
Aqueous geochemistry and astrobiology
Mars atmospheric escape
Planetary climate, radiation
Earth and planetary interiors

Images, clockwise from upper left: Cassini image of Saturn’s rings, HST image of Mars, Student Dust Counter on New Horizons Pluto spacecraft, 4.3-b.y.-old zircon, theoretical Mars ground ice distribution, Jupiter magnetosphere, simulation of Io’s escaping atmosphere, Europa surface ridged plains, Mars water-carved outflow channel.

For more information, look on our web site at: http://lasp.colorado.edu/planetary or contact planetary@lasp.colorado.edu.