Amanda R. Hendrix
Senior Scientist, Planetary Science Institute; arh@psi.edu

Education
• Ph.D., Aerospace Engineering Sciences, University of Colorado, 1996
thesis title: *The Galileo Ultraviolet Spectrometer: In-Flight Calibration and the Ultraviolet Albedos of the Moon, Gaspra, Ida and Europa*
thesis advisor: Professor Charles Barth
• M.S., Aerospace Engineering Sciences, University of Colorado, 1994
• B.S., Aeronautical Engineering, California Polytechnic State University, 1991

Research Focus
• UV spectroscopy of planetary surfaces: icy satellites, asteroids, Earth's moon, Mars; weathering processes and radiation products; Jupiter's moon Io

Research Experience
Principal Investigator, TREX SSERVI Node (2017 – present)
Co-investigator, Cassini UVIS, August 1999 - present
Participating Scientist, LRO LAMP, January 2008 – present
Co-investigator, Galileo UVS, September 1997-2003
Principal Investigator: HST, CDAP, PDART, LASER, OPR, PG&G, JSDAP, MDAP research programs

• **Planetary Science Institute**, October 2012- present
- Senior Scientist

• **Jet Propulsion Laboratory,** December 2000 – September 2012
- Research Scientist, Asteroids, Comets and Planetary Satellites Group
- Cassini mission to Saturn
  Deputy Project Scientist (May 2010-September 2012)
  UVIS Investigation Scientist
  Co-chair, Satellites Orbiter Science Team
  Chair, Enceladus Plume Working Group
- Europa Orbiter of the Jupiter Joint Science Definition Team
  Deputy Study Scientist (February 2008-April 2009)
- Jovian System Orbiter Science Definition Team, 2007
- Advisor
  Emilie Royer, JPL post-doc, April 2012-September 2013
  Timothy Cassidy, JPL post-doc, November 2009-July 2011

• **Johnson Space Center**, Earth Science and Solar System Exploration Div., June-August, 1999
- fellow, NASA-ASEE Summer Faculty Program

• **Univ. Colorado,** Lab for Atmospheric and Space Physics, Aug 1996 – Nov 2000
- Postdoctoral research associate

Teaching Experience

• **Univ. Colorado,** Lab for Atmospheric and Space Physics, Aug 1996 – Nov 2000
- Postdoctoral research associate
- Lecturer, Astrophysical and Planetary Sciences Dept.
"Astronomy of the Solar System"
"Planets, Moons and Rings"

• **Mount San Antonio College**, February 2013-December 2014
- adjunct professor, Astronomy and Earth Science Dept., ASTR7 "Geology of the Solar System"

• **Cal Poly Pomona**, April –December 2014
- adjunct professor, Geological Sciences Dept, GSC 495, "Planetary Science"
GSC 116, "Introductory Astronomy"

Publications: Selected Journal Articles and Book Chapters

Hendrix, A. R. and Y. Yung 2017. Energy options for future humans on Titan. J. Astrobiol. Outreach 5, DOI: 10.4172/2332-2519.1000157

Nordheim, T. A., K.P. Hand, C. Paranicas, C. J. A. Howett, A. R. Hendrix, G.H. Jones, A. J. Coates 2016. The near-surface electron radiation environment of Saturn's moon Mimas. *Accepted, January 2017*.

Cuzzi, J. C., L. Chambers, A. R. Hendrix 2016. Rough Surfaces: is the dark stuff just shadow? *accepted, Icarus,* 2016.

Hendrix, A. R., F. Vilas, and J.-Y. Li (2016), Ceres: Sulfur deposits and graphitized carbon, Geophys. Res. Lett. , 43, doi:10.1002/2016GL070240.

Vilas, F. and A. R. Hendrix 2015. Space Weathering of S-Complex Asteroids Manifested in the UV/Blue: Recent Insights and Future Directions. *submitted*.

Domingue, D. L., Faith Vilas, Teck Choo, Karen R. Stockstill-Cahill, Joshua T. S. Cahill, Amanda R. Hendrix 2016. Regional Spectrophotometric Properties of 951 Gaspra, *Icarus* 280, 340-358

Hendrix, A.R., T. K. Greathouse, K. D. Retherford, K. E. Mandt, G. R. Gladstone, D. E. Kaufmann, D. M. Hurley, P. D. Feldman, W. R. Pryor, S. A. Stern. 2015. Lunar Swirls: Far-UV characteristics. *Icarus* 273, 68-74.

Hendrix, A. R., F. Vilas, J.-Y. Li 2015 The UV Signature of Carbon in the Solar System *Meteoritics & Planetary Science* 1–11 doi: 10.1111/maps.12575

Vilas, F., A. R. Hendrix, E. Jensen 2015. The UV/Blue Effects of Space Weathering Manifested in S-Complex Asteroids II: Probing for Less-Weathered Objects in the Solar System. *Planet. Space Sci.* 118: 273-276.

Vilas, F. and A. R. Hendrix 2015. The UV/blue effects of space weathering manifested in S-complex asteroids I: Quantifying change with asteroid age, *Astron. J.* 150: 64-78.

Hurley, D. M., Jason C. Cook, Kurt D. Retherford, Thomas Greathouse, G. Randall Gladstone, Kathleen Mandt, Cesare Grava, David Kaufmann,

Amanda Hendrix, Paul D. Feldman, Wayne Pryor, Angela Stickle, Rosemary M. Killen, S. Alan Stern. 2016. Contributions of solar wind and micrometeoroids to molecular hydrogen in the lunar exosphere. *Icarus* 283, p. 31-37

Mandt, K. E. T. K. Greathouse, K. D. Retherford, G. R. Gladstone, A. P. Jordan, M. Lemelin, S. D. Koeber, E. Bowman-Cisneros, G. W. Patterson, M. Robinson, P. G. Lucey, **A. R. Hendrix**, D. Hurley, A. M. Stickle, W. Pryor. LRO-LAMP detection of geologically young craters within lunar permanently shaded regions. *Icarus,* published online Aug 2015.

Hayne, P, O., **A. R. Hendrix**, E. Sefton-Nash3, P. G. Lucey, K. D. Retherford, J.-P. Williams, M. A. Siegler, B. T. Greenhagen, D. A. Paige. 2015. Evidence for Exposed Water Ice in the Moon's South Polar 1 Regions from Lunar Reconnaissance Orbiter Ultraviolet Albedo and Temperature Measurements. *Icarus,* 255, 58-69.

Shemansky, D. E., Y. L. Yung, X. Liu, J. Yoshii, C. J. Hansen, **A. R. Hendrix**, L. W. Esposito 2014. A New Understanding of the Europa Atmosphere and Limits on Geophysical Activity *Astrophys. J., v.* 797, article ID 84.

Royer, E. M. and **A. R. Hendrix** 2014. First far-ultraviolet disk-integrated phase curve analysis of Mimas, Tethys and Dione from the Cassini-UVIS data sets. *Icarus,* 242, 158-171.

Hendrix, A. R., Nelson, R. M., & Domingue, D. L. 2014. The Solar System at Ultraviolet Wavelengths. In T. Spohn, D. Breuer, & T. V. Johnson (Eds.), *Encyclopedia of the Solar System*, Elsevier (pp. 1047–1071).

Paranicas, C., E. Roussos, R. B. Decker, R. E. Johnson, **A. R. Hendrix**, P. Schenk, P. Kollmann, T. Cassidy, J. B. Dalton, W. Patterson, K. Hand, T. Nordheim, C. J. A. Howett, N. Krupp, and D. G. Mitchell 2014. The lens feature on the Saturnian satellites. *Icarus* **234**: 155-161.

Cassidy, T. A., C. P. Paranicas, J. H. Shirley, J. B. Dalton III, B. D. Teolis, R. E. Johnson, L. Kamp, **A. R. Hendrix** 2013. Magnetospheric ion sputtering and water ice grain size at Europa. *Planet. Space Sci.* **77**: 64-73.

Hendrix, A. R., D. L. Domingue, K. S. Noll 2013. UV Properties of Planetary Ices, chapter in Solar System Ices (eds. Gudipati and Castillo-Rogez), Springer.

Paranicas, C. E. Roussos, N. Krupp, P. Kollmann, **A.R. Hendrix**, T. Cassidy, R.E. Johnson, P. Schenk, G. Jones, J. Carbary, D.G. Mitchell, K. Dialynas 2012. Energetic charged particle weathering of Saturn's inner satellites. *Planet Space Sci* **61**, 60-65.

Hendrix, Amanda R. and 17 co-authors 2012. The Lunar Far-UV Albedo: Indicator of Hydration and Weathering. *J. Geophys. Res.* 117: E12001, doi:10.1029/2012JE004252

Hendrix, A. R. and 9 co-authors 2012. Mimas' far-UV albedo: Spatial variations. *Icarus* 220: 922-931.

Gladstone, G. R., K. D. Retherford, A. F. Egan, D. E. Kaufmann, P. F. Miles, J. W. Parker, D. Horvath, P. M. Rojas, M. H. Versteeg, M. W. Davis, T. K. Greathouse, D. C. Slater, J. Mukherjee, A. J. Steffl, P. D. Feldman, D. M. Hurley, W. R. Pryor, **A. R. Hendrix**, E. Mazarico, S. A. Stern 2012. Far-ultraviolet reflectance properties of the Moon's permanently shadowed regions. J. Geophys. Res., 117,

E00H04, doi:10.1029/2011JE003913.
Zastrow, M., J. T. Clarke, A. R. Hendrix, K. S. Noll 2012. UV spectrum of Enceladus. *Icarus* 220: 29-35.
Hendrix, A. R., T. A. Cassidy, R. E. Johnson, C. Paranicas 2011. Europa's Disk-Resolved Ultraviolet Spectra: Relationships with Plasma Flux and Surface Terrains. *Icarus* 212: 736-743.
Hendrix, A. R., C. J. Hansen, G. M. Holsclaw 2010. The Ultraviolet Reflectance of Enceladus: Implications for Surface Composition, *Icarus* 206: 608-617.
McGrath, M. A., C. J. Hansen, A. R. Hendrix 2009. Observations of Europa's Tenuous Atmosphere, in Europa (eds. Pappalardo, McKinnon, Khurana), Univ. Arizona Press.
Jaumann, R, R. Clark, F. Nimmo, A. Hendrix, B. Buratti, T. Denk, J. Moore, P. Schenk, S. Ostro, R. Srama 2009. Icy Satellites: Geological Evolution and Surface Processes, in Saturn from Cassini/Huygens (eds. Dougherty, Esposito, Krimigis), Springer.
Greeley, R., R. T. Pappalardo, L. M. Prockter, A. R. Hendrix 2009. Future Exploration of Europa, in Europa (eds. Pappalardo, McKinnon, Khurana), Univ. Arizona Press.
Hendrix, A. R. and R. E. Johnson 2008. Callisto: New insights from Galileo disk-resolved UV measurements, *Astrophys. J.* 687: 706.
Hansen, C. J. *et al.,* 2008. Water vapour jets inside the plume of gas leaving Enceladus, *Nature*, 456: 477-479.
Cloutis, E. A. *et al.* 2008. Ultraviolet spectral reflectance properties of common planetary minerals, *Icarus* 197: 321-347.
Jones, G. H. *et al.* 2008. The dust halo of Saturn's largest icy moon, Rhea. *Science* 319: 1380.
Cruikshank, D. P. *et al.* 2007. Surface Composition of Hyperion. *Nature* 448: 54-56.
Hendrix, A. R. and C. J. Hansen 2008. The Albedo Dichotomy of Iapetus Measured at UV Wavelengths, *Icarus* 193: 344-351.
Hendrix, A. R. and C. J. Hansen, 2008. Ultraviolet Observations of Phoebe from Cassini UVIS, *Icarus* 193: 323-333.
Hendrix, A. R. and F. Vilas 2006. The Effects of Space Weathering at UV Wavelengths: S-class Asteroids, *Astron. J.*: 132: 1396-1404.
Hendrix, A. R., R. M. Nelson, D. L. Domingue 2006. The Solar System at Ultraviolet Wavelengths, in Encyclopedia of the Solar System 2nd ed. (eds. McFadden, Weissman, Johnson), Academic Press.
Hansen, C. J., L. Esposito, A. I. F. Stewart, J. Colwell, A. Hendrix, W. Pryor, D. Shemansky, R. West 2006. Enceladus's water vapor plume. *Science* 311: 1422-1425.
Spencer, J. R., J. C. Pearl, M. Segura, F. M. Flasar, A. Mamoutkine, P. Romani, B. J. Buratti, A. R. Hendrix, L. J. Spilker, R. M. C. Lopes 2006. Cassini encounters Enceladus: Background and the discovery of a south polar hot spot. *Science* 311: 4101-1405.
Hansen, C. J., D. E. Shemansky, A. R. Hendrix 2005. Cassini UVIS Observations of Europa's Oxygen Atmosphere and Torus. *Icarus* 176: 305-315.
Esposito, L.W., J. E. Colwell, K. Larsen, W. E. McClintock, A. I. F. Stewart, J. Tew Hallett. D. E. Shemansky, J. M. Ajello, C. J. Hansen, A. R. Hendrix, R. A. West,

H. U. Keller, A. Korth, W. R. Pryor. R. Reulke, Y. L. Yung 2005. Ultra-Violet Imaging Spectroscopy shows an active Saturn system. *Science* 307, 1251-1255.
Hendrix, A. R., D. L. Domingue, K. King 2005. The Icy Galilean Satellites: Ultraviolet Phase Curve Analysis. *Icarus* 173: 29-49.
Domingue, D. L. and Hendrix, A. R. 2005. A Search for Temporal Variability in the Surface Chemistry of the icy Galilean Satellites. *Icarus* 173: 50-65.
Hendrix, A. R., F. Vilas, M. C. Festou 2003. Vesta's UV Lightcurve: Hemispheric Variation in Brightness and Spectral Reversal. *Icarus* 162: 1-9.
Herbert, F., Schneider, N. M., Hendrix, A. R., Bagenal, F. 2003. Hubble Space Telescope observations of sulfur ions in the Io plasma torus: New constraints on the plasma distribution. *J. Geophys. Res.* 108.
Hendrix, A. R., C. A. Barth, C. W. Hord 1999. Io's Patchy SO_2 Atmosphere as Measured by the Galileo Ultraviolet Spectrometer. *J. Geophys. Res.* 104: 11817-11826.
Hendrix, A. R., C. A. Barth, C. W. Hord 1999. Ganymede's Ozone-Like Absorber: Observations by the Galileo Ultraviolet Spectrometer. *J. Geophys. Res.* 104: 14169-14178.
Carlson, R. W., M. S. Anderson, R. E. Johnson, W. D. Smythe, A. R. Hendrix, C. A. Barth, L. A. Soderblom, G. B. Hansen, T. B. McCord, J. B. Dalton, R. N. Clark, J. H. Shirley, A. C. Ocampo, D. L. Matson 1999. Hydrogen Peroxide on the Surface of Europa. *Science* 283: 2062-2064.
Hendrix, A. R., C. A. Barth, C. W. Hord, A. L. Lane 1998. Europa: Disk-Resolved Ultraviolet Measurements using the Galileo Ultraviolet Spectrometer. *Icarus* 135: 79-84.

Selected Mission Studies Membership

• ASTRO-1 Requirements Team (ART), 2015-2016
• Asteroid Retrieval Mission (ARM) Formulation Assessment and Support Team (FAST) 2015
• Jovian System Orbiter (JSO) Science Definition Team, 2007
• Europa Orbiter of the Jupiter Joint Science Definition Team (JJSDT), Deputy Study Scientist (February 2008-April 2009

Professional Societies, Committees, Service

• JWST Users Committee, 2017-
• Member, Committee on the Review of Progress Toward Implementing the Decadal Survey Vision and Voyages for Planetary Sciences, 2017
• HST Europa Advisory Committee, 2017
• Outer Planets Assessment Group (OPAG) steering committee, 2016-
• Roadmaps to Ocean Worlds (ROW) co-chair, 2016-
• Enceladus and the Icy Moons of Saturn Meeting SOC, 2016
• Outer Planets Assessment Group (OPAG) steering committee, 2016-
• Roadmaps to Ocean Worlds (ROW) co-chair, 2016
• PDS Small Bodies Node review panel, 2015
• Barth Symposium program committee, 2015
• JWST Solar System Observers Advisory Panel (SSOAP)
• DPS 2016 LOC

• American Geophysical Union (AGU) member
• American Astronomical Society (AAS), Division of Planetary Sciences (DPS) member
• International Astronomical Union (IAU) member
• Magnetospheres of the Outer Planets (MOP) 2013 Science Organizing Committee
• DPS 2012 Science Organizing Committee (SOC) member
• LPSC 2012 Program Committee (2009, 2012)
• AGU Fall meeting special session organizer and chair (e.g., 2007, 2012, 2013, 2014…)
• DPS 2010 Meeting Local Organizing Committee (chair) & SOC member
• London Cassini icy satellites meeting co-organizer (July 2009)
• Icarus special issue "Cassini at Saturn" guest editor (2009)
• NASA proposal reviewer (numerous programs)
• AAS Congressional Visits Day, DPS representative, March 4-5 2008
• NOAO Solar System TAC May 2008-May 2010
• LRO LAMP PDS Review panel October – November 2007
• AAS/DPS Nominating Subcommittee October 2007-2010
• Hubble Space Telescope proposal review panel, 2003, 2007, 2010.
• DPS 2006 meeting SOC & LOC member
• AGU Index Terms Committee (2004) - Planetary Sciences representative

Honors and Awards
• JPL Lew Allen Award for Excellence, 2006
• JPL Section 317 Award for Excellence, 2005 (Cassini Science Planning leadership)
• NASA-ASEE Summer Faculty Fellowship, 1999
• Patricia Roberts Harris Fellowship, 1993-1995
• California Pre-Doctoral Fellowship, 1991

NASA Group Achievement Awards:
2/10/1995 Galileo Ida Encounter/Dactyl Discovery Team
5/5/2008 Cassini Education and Public Outreach Team
4/16/2009 Cassini Magnetosphere Target Working Team
4/16/2009 Cassini Titan Orbiter Science Team
4/16/2009 Cassini Rings Target Working Team
4/16/2009 Cassini Satellite Orbiter Science Team
4/16/2009 Cassini Ultraviolet Imaging Spectrograph Team
4/16/2009 Cassini Saturn Tour Flight Team
5/11/2010 The Lunar Reconnaissance Orbiter (LRO) Team
6/30/2011 Cassini Solstice Pre-Integration Team
6/2/2015 The LRO Extended Science Mission Team

Cassini-Huygens Project Certificates of Appreciation:
Cassini Science Planning Virtual Team leadership
Cassini Probe Support (Probe Relay Activity)
Cassini Satellite Orbiter Science Team
Enceladus Plume Working Group leadership (7/2007)
CHARM telecon management (5/2008)

SOST and Icy Satellites Working Group leadership (3/2010)
Cassini Senior Review Proposal Team (6/2014)

Cassini-Huygens Project Certificates of Recognition:
Cassini Science Planning leadership
Cassini integrated science plan
Cassini TOST integration

Recent Seminars, Public Talks, Outreach Activities
Numerous presentations, late 2016-2017, covering Beyond Earth

Mead Middle School 8th grade science classes, 15-16 May 2017, Cassini mission

"UV Characteristics of Ices," 12 May 2017, Rosetta Alice webinar

Cassini CHARM telecon, The Fabulous Five Flybys of Small Moons During the F Ring Orbits," 25 April 2017

"The Cassini Mission Comes to an End in 2017," 20 April 2017, Longmont Astronomical Society, Longmont

Oregon Episcopal School visit, 7 April 2017, Cassini mission

"Icy Satellite Surfaces: New Insights from UV Spectroscopy," 17 March 2017, Southwest Research Institute, San Antonio

"The Cassini Mission Comes to an End," 2 February 2017, Northern Colorado Astronomical Society, Fort Collins

Invited keynote talk, "Far-UV Albedo: Diurnal Variations in Hydration and a Probe for the Lunar Cryosphere," Microsymposium 57, "Polar Volatiles on the Moon and Mercury: Nature, Evolution and Future Exploration," Houston, March 2016

"New Insights into Solar System Surfaces using Ultraviolet Spectroscopy," Southwest Research Institute, Boulder, 13 October 2015.

"Ultraviolet Spectroscopy of Moons in the Solar System," Charles Barth Memorial Symposium, May 2015

"Ultraviolet Spectroscopy of Solar System Moons," Freie Universitaet Geokolloquium, June 2014

"Ultraviolet Spectroscopy of Solar System Moons," LASP Seminar, Oct 2013

"Revisiting the Wet Moon," The Planetary Report (radio interview + article), June 2013

"Lunar Exploration: From the Apollo Era to the Future," 2013 Kepler Lecture, Mt. San Antonio College, April 11 2013.

"Titan, Enceladus and the Other Moons of Saturn," AAAS meeting invited talk, Feb 15 2013, Boston

"Multi-Wavelength Observations of Saturn's Icy Moons," UCF Physics Dept. colloquium, Feb 17 2012, Orlando

"Saturn's Icy Moons: Understanding the Effects of Exogenic Processes," UCF planetary seminar, Feb 17 2012, Orlando

"New Light on the Moon: Charting Lunar Ice with LRO-LAMP," National Space Society's LA Chapter, Nov 13 2010, Long Beach

Accepted Proposals

- Solar System Exploration Research Virtual Institute (SSERVI), Principal Investigator, "Toolbox for Research and Exploration (TREX)," 2017-
- Planetary Data Archiving, Restoration, and Tools (PDART), Principal Investigator, "The Archive for UV Data of Small Bodies," 2016 (co-investigators F. Vilas, J.-Y. Li, D. Bodewits, collaborator L. Feaga)
- Cassini Data Analysis Program, Co-Investigator (PI E. Royer), "A Multi-Wavelength Investigation of Dione and Helene: Searching for Correlations Between and Inner Saturnian Satellite and its Co-Orbital moon", ROSES 2015
- Cassini Data Analysis Program, Principal Investigator, "Carbon in the Saturnian System," ROSES 2015
- Hubble Space Telescope, Principal Investigator, "UV spectra of the icy Saturnian satellites: Understanding exogenic processes and NH_3 in the system," Cycle 22, 2014 (co-investigators K. Noll, J. Spencer)
- Hubble Space Telescope, Principal Investigator, "The Ultraviolet Spectrum of Ceres," Cycle 22, 2014 (co-investigators F. Vilas and J.-Y. Li)
- LASER program, Principal Investigator, "Investigation of Hydration and Weathering on the Moon," ROSES 2012 (collaborators Kurt Retherford and Randy Gladstone)
- Cassini Data Analysis Program, Principal Investigator, "The UV-Vis Characteristics of Saturn's Icy Moons," ROSES 2012 (co-investigators J. Cuzzi, R. Clark, G. Filacchione, P. Schenk)
- Hubble Space Telescope, Co-Investigator, "The Mysterious Redness of Saturn's Rings," Cycle 19, 2011 (PI Jeff Cuzzi)
- Outer Planets Research Program, Principal Investigator, "Ganymede: Moon-Magnetosphere Interactions and Effects on UV Signatures," 2010 (co-investigators Tim Cassidy, Robert Johnson)
- LASER program, Principal Investigator, "The Ultraviolet Moon," 2009 (co-investigator Faith Vilas)

- LRO Participating Scientist, “Investigation into Lunar Surface Composition and Weathering Effects,” January 2008
- Cassini Data Analysis Program, Co-Investigator, “Optical Constants of Water Ices in the 100-200 nm VUV Region,” 2007 (PI M. Gudipati, JPL)
- Outer Planets Research Program, Co-Investigator, “Vacuum Ultraviolet Spectroscopy of Icy Mixtures Relevant to the Outer Solar System,” 2008 (PI P. Gerakines, Univ. Alabama)
- LASER program, co-investigator, “LASP Lunar Albedo Measurement and Analysis from SOLSTICE,” 2007, (PI M. Snow, Univ. Colorado)
- Cassini Data Analysis Program, Principal Investigator, "Multi-Wavelength Photometry of the Icy Saturnian Satellites," 2007 (co-investigator Bonnie Buratti)
- Planetary Geology and Geophysics, Principal Investigator, “The Icy Galilean Satellites: Environmental Effects at Ultraviolet Wavelengths,” 2005 (co-investigator Robert Johnson)
- Hubble Space Telescope, Co- Investigator, “Probing Asteroid Families for Evidence of Ultraviolet Space Weathering Effects,” Cycle 14, 2005-2006 (PI Faith Vilas)
- Hubble Space Telescope, Principal Investigator, “An Analysis of HST and IUE Spectra to Investigate the Effects of Space Weathering at Ultraviolet Wavelengths,” Cycle 13, 2004-2005 (co-investigator Faith Vilas)
- Mars Data Analysis Program, Principal Investigator, “Characterizing the Oxidizing Properties of Mars’ Polar Regions,” April 2000-April 2002 (co-investigators Karen Simmons, Charles Barth, Bruce Jakosky)
- Jupiter System Data Analysis Program, Principal Investigator, “Galileo Multi-Spectral Analysis of the Galilean Satellites,” January 2000-December 2001 (co-investigators Bob Carlson, Bill Smythe)
- Johnson Space Center Director’s Grant, Principal Investigator, “Multi-Wavelength Analysis of Asteroids,” March 2000-June 2000 (co-investigator Faith Vilas)
- Jupiter System Data Analysis Program, Principal Investigator, “Ultraviolet Photometric Parameters of the Icy Galilean Satellites and the Moon,” January 1999-June 2001 (co-investigators Deborah Domingue and Lonne Lane)
- Hubble Space Telescope, Co-Investigator, “HST-Galileo Io Campaign,” Cycle 8, 1999-2000 (principal investigator Fran Bagenal)