

- De Anza College Outstanding Science and Engineering Student, 6/94
- NASA Ames-Foothill/De Anza Internship Program, 6/93-8/94
- San Jose State University Chemistry Scholarship, 1990

Guest Lectures, Invited Presentations, and Workgroups:

- Colloquium, Stony Brook University Department of Geosciences, 2009.
- Seminar, University of Washington Astrobiology Institute Seminar Series, 2008.
- Invited Presentation, Geological Society of America Annual Meeting, 2007
- Mars Scout Phoenix Landing Site Working Group, 2006-2007
- Invited Presentation, American Geophysical Union, Fall Meeting, 2006
- Mars Reconnaissance Orbiter Aerobraking Atmospheric Advisory Group, 2006
- Invited Presentation, American Geophysical Union, Spring Meeting, 2004
- Seminar, Berkeley Department of Astronomy Special Lecture, 2004
- Guest Lecture, TES Data Users Workshop, 2001

Education/ Public Outreach Activities:

- Collaborator, Expedition Earth and Beyond, NASA JSC, 2009-2012
- Public Lectures, Science Cafe, Pacific Science Center/KCTS, 2010
- Ice on Mars!, UW/Pacific Science Center Polar Science Weekend, 2010
- Earth Revealed, Pacific Science Center Portal to the Public, 2009
- Instructor and Curriculum Development, Mars Student Imaging Project, 2003-2010
- Guest Lecture, National Science Teachers Association Web Seminars, 2006-2008
- Guest Lecture, NASA Winter's Story Teachers Workshop, 2006, 2007
- Instructor/field guide, National Remote Sensing Educator Workshop, 1999-2005
- Guest Instructor, University of Arizona Astronomy Camp, 1998, 1999
- Guest Instructor, ASU Mars K-12 Education Outreach spring and fall teacher workshops, 1996-1999
- Field guide, TES Composition Workshop, 1997

Current and Past Funding:

Principal Investigator, Mars Data Analysis Program, Integrated Analyses of Martian Surface Compositions Using Near-Infrared through Thermal Infrared Spectroscopic Data, 2010-2013.

Team Associate, Thermal Emission Imaging System Phase E, 2008-2011.

Principal Investigator, Lunar Reconnaissance Orbiter Participating Scientist Program, Characterization of lunar thermophysical and spectral properties with the Diviner radiometer, 2008-2011

Principal Investigator, Critical Data Products for Mars Landing Site Characterization (CDP IV) TES and THEMIS Surface Mineralogy, Dust Cover, and Emissivity for MSL Landing Site Characterization, FY 2008-2009

Co-Investigator, Mars Data Analysis Program
Geologic Characterization of Likely Chloride Salt Deposits on Mars, FY 2008-2011

Principal Investigator, Mars Data Analysis Program
Investigation of spectral diversity in Thermal Emission Imaging System data, FY 2007-2009

Principal Investigator, Mars Reconnaissance Orbiter Participating Scientist
Mars Climate Sounder: Ensuring continuity with previous thermal infrared measurements, FY 2007-2009

Science PI, Mars Scout Phoenix Lander Critical Data Product Initiative (CDP III)
Surface Slope Characteristics from Thermal Emission Spectrometer Phase Function Observations, FY
2006-2008 (PI: Philip Christensen)

National Research Council Postdoctoral Associate
Separation and retrieval of Martian surface and atmosphere spectral components
2001-2002

Refereed Publications:

Bandfield, J.L., Effects of surface roughness and graybody emissivity on martian thermal infrared spectra,
Icarus, 202, 10.1016/j.icarus.2009.03.031, 2009.

Bandfield, J.L., High-silica deposits of an aqueous origin in western Hellas Basin, Mars, *Geophysical
Research Letters*, 35, 10.1029/2008GL033807, 2008.

Bandfield, J.L., A.D. Rogers, Olivine dissolution by acidic fluids in Argyre Planitia, Mars: Evidence for a
widespread process?, *Geology*, 36, 10.1130/G24724A.1, 2008.

Bandfield, J.L., W.C. Feldman, Martian high latitude permafrost depth and surface cover thermal inertia
distributions, *Journal of Geophysical Research*, 10.1029/2007JE003007, 2008.

Bandfield, J.L., C.S. Edwards, Derivation of Martian surface slope characteristics from directional thermal
infrared radiometry, *Icarus*, 10.1016/j.icarus.2007.08.028, 2008.

Bandfield, J.L., High Resolution Subsurface Water Ice Distributions on Mars, *Nature*, 0.1038/nature05781,
2007.

Bandfield, J.L., Extended surface exposures of granitoid compositions in Syrtis Major, Mars, *Geophysical
Research Letters*, 10.1029/2005GL025559, 2006.

Bandfield, J.L., V.E. Hamilton, P.R. Christensen, H.Y. McSween Jr., Identification of quartzofeldspathic
materials on Mars, *Journal of Geophysical Research*, 10.1029/2004JE002290, 2004.

Bandfield, J.L., D. Rogers, M.D. Smith, P.R. Christensen, Atmospheric correction and surface spectral unit
mapping using Thermal Emission Imaging System data, *Journal of Geophysical Research*,
10.1029/2004JE002289, 2004.

Bandfield, J.L., T.D. Glotch, P.R. Christensen, Spectroscopic Identification of Carbonate Minerals in the
Martian Dust, *Science*, 301, 1084-1087, 2003.

Bandfield, J.L., M.D. Smith, Multiple emission angle surface-atmosphere separations of Thermal Emission
Spectrometer data, *Icarus*, 161, 47-65, 2003.

Bandfield, J.L., K.S. Edgett, P. R. Christensen, Spectroscopic study of the Moses Lake dune field, WA:
Determination of compositional distributions and source lithologies, *Journal of Geophysical Research*,
107, 10.1029/2000JE001469, 2002.

Bandfield, J.L., Global mineral distributions on Mars, *Journal of Geophysical Research*, 107,
10.1029/2001JE001510, 2002.

- Bandfield, J.L., V.E. Hamilton, P.R. Christensen, A Global View of Martian Surface Compositions From MGS-TES, *Science*, 287, 1626-1630, 2000.
- Bandfield, J.L., P.R. Christensen, M.D. Smith, Spectral dataset factor analysis and endmember recovery: Application to Martian atmospheric particulates, *Journal of Geophysical Research*, 105, 9573-9588, 2000.
- Christensen, P.R., J.L. Bandfield, R.L. Fergason, V.E. Hamilton, A.D. Rogers, The compositional diversity and physical properties mapped from the Mars Odyssey Thermal Emission Imaging System, in *The Martian Surface - Composition, Mineralogy, and Physical Properties*. J. Bell, III, Ed.. Cambridge University Press, p. 221-241, 2008.
- Christensen, P.R., J.L. Bandfield, A.D. Rogers, T.D. Glotch, V.E. Hamilton, S.W. Ruff, M.B. Wyatt, Global mineralogy mapped from the Mars Global Surveyor Thermal Emission Spectrometer, in *The Martian Surface - Composition, Mineralogy, and Physical Properties*. J. Bell, III, Ed.. Cambridge University Press, p. 195-220, 2008.
- Christensen, P.R., and 11 colleagues (including J.L. Bandfield), Evidence for magmatic evolution and diversity on Mars from infrared observations, *Nature*, 436, 504-509, 2005.
- Christensen, P.R., and 26 colleagues (including J.L. Bandfield), Mineralogy at Meridiani Planum from the Mini-TES Experiment on the Opportunity Rover, *Science*, 306, 1733-1739, 2004.
- Christensen, P.R., and 26 colleagues (including J.L. Bandfield), Initial Results from the Mini-TES Experiment in Gusev Crater from the Spirit Rover, *Science*, 305, 837-842, 2004.
- Christensen, P.R., and 21 colleagues (including J.L. Bandfield), Morphology and Composition of the Surface of Mars: Mars Odyssey THEMIS Results, *Science*, 300, 2056-2061, 2003.
- Christensen, P.R., M.C. Malin, R.V. Morris, J.L. Bandfield, M.D. Lane, Aqueous Sedimentary Mineralization of the Martian Surface: Evidence for Liquid Water, *Journal of Geophysical Research*, 106, 23,873-23,885, 2001.
- Christensen, P.R., and 25 colleagues (including J.L. Bandfield), The Mars Global Surveyor Thermal Emission Spectrometer experiment: Investigation description and surface science results, *Journal of Geophysical Research*, 106, 23,823-23,871, 2001.
- Christensen, P.R., J.L. Bandfield, M.D. Smith, V.E. Hamilton, Identification of a basaltic component on the Martian surface from Thermal Emission Spectrometer data, *Journal of Geophysical Research*, 105, 9609-9631, 2000.
- Christensen, P.R., J.L. Bandfield, V.E. Hamilton, D.A. Howard, M.D. Lane, J.L. Piatek, S.W. Ruff, W.L. Stefanov, A thermal emission spectral library of rock-forming minerals, *Journal of Geophysical Research*, 105, 9735-9740, 2000.
- Christensen, P.R., and 15 colleagues (including J.L. Bandfield), Detection of crystalline hematite mineralization on Mars by the Thermal Emission Spectrometer, *Journal of Geophysical Research*, 105, 9632-9642, 2000.
- Edwards, C.S., J.L. Bandfield, P.R. Christensen, and R.L. Fergason, Global distribution of bedrock exposures on Mars using THEMIS high-resolution thermal inertia, *Journal of Geophysical Research*, 114, 10.1029/2009JE003363, 2009.

- Feldman, W.C., J.L. Bandfield, B. Diez, R.C. Elphic, S. Maurice, S.M. Nelli, North to south asymmetries in the water-equivalent hydrogen distribution at high latitudes on Mars, *Journal of Geophysical Research*, 113, 10.1029/2007JE003020, 2008.
- Feldman, W.C., M.C. Bourke, R.C. Elphic, S. Maurice, J. Bandfield, T.H. Prettyman, B. Diez, D.J. Lawrence, Hydrogen Content of Sand Dunes within Olympia Undae, *Icarus*, 10.1016/j.icarus.2007.08.044, 2007.
- Fenton, L.K., J.L. Bandfield, A.W. Ward, Aeolian processes in Proctor Crater on Mars: Sedimentary history as analyzed from multiple datasets, *Journal of Geophysical Research*, in press, 2003.
- Glotch, T.D., J.L. Bandfield, Determination and interpretation of surface and atmospheric Miniature Thermal Emission Spectrometer spectral end-members at the Meridiani Planum landing site, *Journal of Geophysical Research*, 111, 10.1029/2005JE002671, 2006.
- Glotch, T.D., J.L. Bandfield, P.R. Christensen, W.M. Calvin, S.M. McLennan, B.C. Clark, A.D. Rogers, S.W. Squyres, Mineralogy of the light-toned outcrop at Meridiani Planum as seen by the Miniature Thermal Emission Spectrometer and implications for its formation, *Journal of Geophysical Research*, 111, 10.1029/2005JE002672, 2006.
- Hamilton, V.E., P.R. Christensen, H.Y. McSween Jr., J.L. Bandfield, Searching for the Source Regions of Martian Meteorites Using MGS TES: Integrating Martian Meteorites into the Global Distribution of Igneous Materials on Mars, *Meteoritics and Planetary Science*, 38, 871-885, 2003.
- Hamilton, V.E., P.R. Christensen, J.L. Bandfield, Volcanism or aqueous alteration on Mars?, *Nature*, 421, 711-712, 2003.
- Hoefen, T.M., R.N. Clark, J.L. Bandfield, M.D. Smith, J.C. Pearl, P.R. Christensen, Discovery of Olivine in the Nili Fossae Region of Mars, *Science*, 302, 627-630, 2003.
- Mellon, M.T., W.V. Boynton, W.C. Feldman, R.E. Arvidson, T.N. Titus, J.L. Bandfield, N.E. Putzig, H.G. Sizemore, A prelanding assessment of the ice table depth and ground ice characteristics in Martian permafrost at the Phoenix landing site, *Journal of Geophysical Research*, 113, 10.1029/2007JE003067, 2008.
- Osterloo M.M., V.E. Hamilton, J.L. Bandfield, T.D. Glotch, A.M. Baldridge, P.R. Christensen, L.L. Tornabene, F.S. Anderson, Chloride-Bearing Materials in the Southern Highlands of Mars, *Science*, 319, 10.1126/science.1150690, 2008.
- Pearl, J.C., M.D. Smith, B.J. Conrath, J.L. Bandfield, P.R. Christensen, Mars Global Surveyor Thermal Emission Spectrometer (TES) Observations of ice clouds during aerobraking and science phasing, *Journal of Geophysical Research*, 106, 12,325-12,338, 2001.
- Rogers, A.D., J.L. Bandfield, Mineralogical characterization of Mars Science Laboratory candidate landing sites from THEMIS and TES data, *Icarus*, 203, 10.1016/j.icarus.2009.04.020, 2009.
- Rogers, A.D., O. Aharonson, J.L. Bandfield, Geologic context of in situ rocky exposures in Mare Serpentis, Mars: Implications for crust and regolith evolution in the cratered highlands, *Icarus*, 200, 10.1016/j.icarus.2008.11.026, 2008.
- Rogers, A.D., J.L. Bandfield,, P.R. Christensen, Global spectral classification of martian low-albedo regions with MGS-TES data, *Journal of Geophysical Research*, 10.1029/2006JE002726, 2007.

- Rogers, A.D., P.R. Christensen, J.L. Bandfield, Compositional heterogeneity of the ancient Martian crust: Analysis of Ares Vallis bedrock with THEMIS and TES data, *Journal of Geophysical Research*, 110, 10.1029/2005JE002399, 2005.
- Ruff, S.W., P.R. Christensen, R.N. Clark, H.H. Kieffer, M.C. Malin, J.L. Bandfield, B.M. Jakosky, M.D. Lane, M.T. Mellon, M.A. Prestley, Mars' "White Rock" feature lacks evidence of an aqueous origin: Results from Mars Global Surveyor, *Journal of Geophysical Research*, 106, 23,921-23,927, 2001.
- Smith, M.D., J.L. Bandfield, P.R. Christensen, M.I. Richardson, THEMIS Infrared Observations of Atmospheric Dust and Water Ice Cloud Optical Depth, *Journal of Geophysical Research*, 108, 10.1029/2003JE002115, 2003.
- Smith, M.D., J.L. Bandfield, P.R. Christensen, Separation of surface and atmospheric spectral features in Mars Global Surveyor Thermal Emission Spectrometer (TES) spectra, *Journal of Geophysical Research*, 105, 9589-9608, 2000.
- Wagstaff, K.L., T.N. Titus, A.B. Ivanov, R. Castaño, J.L. Bandfield, Observations of the north polar water ice annulus on Mars using THEMIS and TES, *Planetary and Space Science*, 10.1016/j.pss.2007.08.008, 2008.
- Wolff, M.J., and 12 colleagues (including J.L. Bandfield), Constraints on dust aerosols from the Mars Exploration Rovers using MGS overflights and Mini-TES, *Journal of Geophysical Research*, 111, 10.1029/2006JE002786, 2006.

Non-Refereed Manuscripts:

- Bandfield, J.L., P. Christensen, G. Mehall, M. Smith, M. Wolff, Mars Atmospheric Monitoring with TES Bolometers for MRO Aerobraking Support, ASU Mars Space Flight Facility white paper, April 2005.
- Bandfield, J.L., TES Calibration Update, ASU Mars Space Flight Facility white paper, December 2004.
- Bandfield, J.L., Target Factor Analysis: Application to spectral endmember optimization using Thermal Infrared Multispectral Scanner (TIMS) data of the Western Buckskin Mountains, AZ, *Summaries of the 7th JPL Airborne Earth Science Workshop*, JPL publication 97-21, vol. 3 p 1-10, 1998.
- Kourtides, D.A., J.L. Bandfield, N. Pakrasi, W.C. Pitts, Effect of Ceramic Coatings on Thermal Performance of Flexible Insulations, 26th Int. SAMPE Technical Conference, 1994.