

## WENDY M CALVIN

Dept. Geological Sci & Eng, MS 172, University of Nevada, Reno, NV 89557, USA

Office: 775-784-1785

email: [wcalvin@unr.edu](mailto:wcalvin@unr.edu)

<https://wendycalvin.com>

### EDUCATION

University of Colorado, Boulder, CO. Doctor of Philosophy 1991. Geophysics.

Dissertation: Indications of the Mineralogy of Callisto and Mars from Reflectance Spectroscopy, Advisor: Roger N. Clark, USGS

University of Denver, Denver, CO. Bachelor of Science (cum laude, φβκ) 1983.

Physics and Mathematics Majors, Geology Minor.

### PROFESSIONAL POSITIONS

University of Nevada, Reno

Department Geological Sciences & Engineering

Department Chair

7/2015 – 6/2022

Professor

7/2009 – Present

Associate Professor

7/2007 – 7/2009

Research Associate Professor

1/2000 – 6/2007

Director, Great Basin Center for Geothermal Energy

5/2010 – 4/2016

U. S. Geological Survey - Astrogeology Team, Flagstaff, AZ

7/1992 - 11/1999

Research Geophysicist

Institute für Planetologie, Universität Münster, Münster, Germany 7/1991 to 6/1992

Alexander Von Humboldt Research Fellow

### RESEARCH SUMMARY

My research specialty is optical and infrared spectroscopy of minerals and ices, using field and remote sensing data sets and laboratory analysis to identify and map the surface composition of solid bodies in the solar system. I have focused on outer planet satellites, Mars polar processes, and Martian surface alteration. I have also used these systems for terrestrial analogs for Mars, exploration for geothermal energy, assessment of mining impacts, geologic mapping and snow cover mapping. I was on the science team for the Mars Exploration Rovers (MER) (mission ended in 2019) and am a science team member with the Compact Reconnaissance Imaging Spectrometer for Mars (CRISM), and the Mars Color Imager / Context Camera (MARCI/CTX) instruments on Mars Reconnaissance Orbiter (MRO) (still operating). I have been a major contributor to the discovery of oxygen on Jupiter's moon Ganymede, ammonia ices on Pluto's satellite Charon, and hydrothermal silica deposits on Mars.

### SUMMARY OF FUNDING AND PUBLICATIONS

I have published 89 peer-reviewed articles (25 in AGU journals), 5 book chapters and 15 significant National Academy and NASA reports including decadal surveys. An additional 31 longer articles were published in reviewed conference proceedings. I have been a funded investigator through NASA research and analysis programs since 1995, I have been awarded over \$9.6 million in research funding (\$6.6 million as PI).

## **TEACHING AND STUDENTS**

I teach undergraduate and graduate courses in geophysics, remote sensing, and spectroscopy. I have been the primary advisor for 11 completed graduate degrees (2 in progress) and on the committees of another 27 graduate students. I have also engaged 12 undergraduates in short term research projects and helped them learn research skills, how to prepare professional presentations, and write research summaries. I have been selected as a Westfall Scholar Mentor by 4 undergraduate students (this award is conferred upon the undergraduate with the highest GPA in any degree program within our Department, the student selects the faculty member that most influenced them during their degree program).

## **SELECTED HONORS AND AWARDS**

2021 Daniel A. and Edith E. O’Keefe Endowed Professor for the Mackay School  
2018 UNR Foundation Professor (conferred on only 3 faculty each year)  
2014 NASA Group Achievement, MER Science/Ops Team – 10 years of exploration  
2013 Mackay Distinguished Faculty Award  
2011 NASA Group Achievement Award, MRO MARCI/CTX Science Team  
2007 Nevada Women of Achievement from the Nevada Women's Fund.  
2006 College of Science H. K. Shin award for Excellence in Research.  
2004 University of Nevada Graduate Student Association Outstanding Mentor Award

## **RECENT SCIENCE ADVISORY COMMITTEES**

Member, Mars Architecture Strategy Working Group (2019-2020)  
Member, NASA Planetary Protection Independent Review Board (2019)  
Member, Steering Committee, Mars Exploration Program Analysis Group 2018-present)  
Member, Mars Ice and Climate Evolution Science Analysis Group (ICE-SAG) (2018-2019)

## **SELECTED HIGHLY CITED PUBLICATIONS (\*STUDENT)**

- Ehlmann, B.L., et al. (2008), Orbital Identification of Carbonate-Bearing Rocks on Mars, *Science*, 322, 5909, 1828-1832.
- Squyres, S. W., et al. (2008), Detection of silica-rich deposits on Mars, *Science*, 320, 1063-1067. DOI: 10.1126/science.1155429
- \*Vaughan, R.G., S.J. Hook, W.M. Calvin and J.V. Taranik (2005) Surface mineral mapping at Steamboat Springs, Nevada, USA, with multi-wavelength thermal infrared images, *Remote Sensing of Environment*, **99** (1-2), pp. 140-158.
- Brown, M.E. and W.M. Calvin (2000) Evidence for crystalline water and ammonia ices on Pluto’s satellite Charon, *Science*, 287, 107-109.
- Spencer, J.R., Calvin, W.M., and Person, M.J. (1995) Charge-coupled device spectra of the Galilean satellites: Molecular Oxygen on Ganymede, *J. Geophys. Res.*, 100, pp. 19049 – 19056.
- King, T.V.V., Clark, R.N., Calvin, W.M., Sherman, D.M., and Brown, R.H. (1992) Evidence for Ammonium-bearing minerals on Ceres, *Science*, **255**, 1551-1553.

## **PROFESSIONAL SOCIETIES**

American Geophysical Union, Association for Women Geoscientists, International Glaciological Society, IEEE Geosciences and Remote Sensing, Geological Society of America