Bruce Allan Campbell

Senior Scientist and Chair
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Education

Ph.D., Geology and Geophysics, 1991, University of Hawaii, Honolulu, Hawaii.
B.S., Geophysics, 1986, Texas A&M University, College Station, Texas.

Employment

Smithsonian Institution, Geophysicist (1992-present)
Conducts research on a wide range of planetary science topics through applications of radar remote sensing. As Department Chair, responsible for science oversight, budget planning, personnel supervision, and coordination of exhibit and outreach activities.

NASA Headquarters, Discipline Scientist (1996-1998)
Planetary Instrument Definition & Development Program
Managed competitive research and analysis program for development of advanced spacecraft instruments and new remote sensing technologies.

Research Interests

- Moon, Venus, and Mars radar imaging using the Arecibo and Green Bank Telescopes.
- Polarimetric imaging radar techniques and surface scattering models.
- Doppler processing and ionospheric compensation algorithms for radar sounder data.
- Leading development efforts for Mars radar imaging and ice-mapping mission.
- Extensive field measurements of natural terrain topography.
- Quantitative approaches to surface roughness characterization with fractal methods.
- Venus volcanic deposits and surface-atmosphere processes.
- Lunar impact, volcanic, and polar deposits.
- Sedimentary, glacial, polar, and volcanic units on Mars.
- Mars ionosphere variations due to solar and crustal magnetic effects.

Professional Societies

American Geophysical Union
Institute of Electrical and Electronics Engineers (Senior Member)

Planetary Mission Involvement

NASA MRO Shallow Subsurface Radar Sounder Team Member (SHARAD)
ESA Jupiter Icy Moons Explorer Radar Sounder Team Member (RIME)
NASA Europa Mission Radar Sounder Team Member (REASON)

Awards

NASA Group Achievement Award, JIMO Science Definition Team, 2005
NASA Group Achievement Award, SHARAD Instrument Development, 2007
NASA Group Achievement Award, SHARAD Processing and Analysis, 2009

NASA Group Achievement Award, SHARAD Science Operations, 2011
NASA Group Achievement Award, MRO Comet Siding-Spring Observations, 2015

Previous and Current Post-Doctoral Associates

Dr. Michael K. Shepard (1994-1995)
Dr. Mark H. Bulmer (1996-2001)
Dr. Rebecca R. Ghent (2002-2006)
Dr. David W. Leverington (2003-2004)
Dr. Lynn M. Carter (2004-2010)
Dr. Gareth Morgan (2010-present)
Dr. Jennifer Whitten (2014-present)

Advisory Panel Service

NASA Planetary Geology & Geophysics Management Operations Working Group	1993-1997
NASA Venus Mapping Steering Group	1995-1996
NASA Terrestrial Planets Campaign Strategy Working Group	1998-1999
NASA Solar System Exploration Technology Assessment Group	2001-2002
Smithsonian Science Commission	2001-2003
NASA Science Definition Team, Jupiter Icy Moons Orbiter (JIMO) Mission	2003-2004
NASA Solar System Exploration Subcommittee	2003-2005
NASA Lunar Reconnaissance Orbiter Objectives/Requirement Definition Team	2004
NASA Moon-Mars Science Linkage Steering Group	2004
NASA MSO Science Analysis Groups I and II	2006-2007
Arecibo Observatory Visiting Committee	2008-2010
NASA Venus Science and Technology Definition Team	2008-2009
NASA Mars Next Orbiter Science Analysis Group, Co-Chair	2015