Bruce Allan Campbell

Senior Scientist
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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/Senior Scientist (1992-present)
Conducts research on a wide range of planetary science topics through applications of radar remote sensing. Department Chair 1998-2002 and 2015-2019.

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
- Quantitative approaches to surface roughness characterization
- 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

Selected Museum Activities

Complete renovation of Venus unit in *Exploring the Planets* gallery (1994)
Complete renovation of Mars unit in *Exploring the Planets* gallery (2010)
New exhibit unit on Pluto and Kuiper Belt in *Exploring the Planets* gallery (2015)
Radar image of Moon as backdrop to Lunar Module in *Milestones of Flight* (2016)
Development team for new *Planets* gallery (2018-2020)
Museum docent training (2020-2021)
Segment for SI Channel "Making Tracks on Mars" (2020)

Professional Societies

American Geophysical Union
Institute of Electrical and Electronics Engineers (Fellow)

Planetary Mission Involvement

NASA *Mars Reconnaissance Orbiter* SHARAD radar sounder Co-Investigator
ESA *Jupiter Icy Moons Explorer* RIME radar sounder Co-Investigator

NASA *Europa Clipper* REASON radar sounder Co-Investigator
NASA *VERITAS* Venus orbiter Co-Investigator (VISAR Co-Lead)
NASA *DaVinci* Venus atmosphere probe Co-Investigator

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)
Smithsonian Secretary's Research Prize (2021)

Post-Doctoral Associates
Dr. Michael Shepard (1994-1995)
Dr. Mark Bulmer (1996-2001)
Dr. Rebecca Ghent (2002-2006)
Dr. David Leverington (2003-2004)
Dr. Lynn Carter (2004-2010)
Dr. Gareth Morgan (2010-2018)
Dr. Jennifer Whitten (2014-2018)
Dr. Erica Jawin (2021-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
NASA-ESA Science Study Team for the Envision mission	2018-2021
NASA PDS Geoscience Node Advisory Group	2018-2020
Arecibo Observatory Salvage Committee	2021
National Radio Astronomy Observatory ngRADAR Concept Review Chair	2023