

CARLE McGETCHIN PIETERS

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Education:

- Ph.D., Massachusetts Institute of Technology, Planetary Science, 1977
- M.S., Massachusetts Institute of Technology, Planetary Science, 1972
- B.S., Massachusetts Institute of Technology, Planetary Science, 1971
- B.A., Antioch College, Math-Education, 1966

Professional Positions:

- 1994 to Present Professor, Department of Geological Sciences, Brown University.
- 1983-1994 Associate Professor, Department of Geological Sciences, Brown University Providence, Rhode Island.
- 1980-1983 Assistant Professor of Research, Department of Geological Sciences, Brown University, Providence, Rhode Island.
- 1977-1980 Space Scientist, Lunar and Planetary Sciences Division, NASA Johnson Space Center, Houston, Texas.
- 1972-1975 Division of Sponsored Research Staff Scientist, Massachusetts Institute of Technology, Planetary Astronomy Laboratory, Department of Earth and Planetary Sciences.
- 1967-1969 Science teacher (Peace Corps), Sarawak, Malaysia.
- 1966-1967 High School. Math teacher, Somerville, Massachusetts.

Completed Research:

Publications: More than 150 research articles in peer-reviewed scientific journals, including a book Remote Geochemical Analyses (Cambridge University Press). In addition, each year tens of short and extended abstracts are presented at professional meetings and workshops.
-Refereed and Non-refereed publications

Research in Progress:

- Lunar science: Remote compositional analysis using spacecraft and telescopic multispectral data. Science questions focus on formation and evolution of the lunar crust and character and diversity of mare basalt types. Craters and large basins are used as probes to the interior. The character and evolution of the enormous South Pole-Aitken Basin continues to be under detailed investigation.
- PI, Moon Mineralogy Mapper (M3): Principal Investigator for an imaging spectrometer (0.4-3.0 μm) to characterize and map the mineralogy of the Moon at high resolution. M3 will

be flown on the Indian Chandrayaan-1 mission to the Moon in early 2008.

- Laboratory spectroscopy experiments: Measuring and modeling the interaction of visible to mid-infrared radiation with geologic materials. Development of quantitative methods for extraction of compositional information. Includes measurement and analyses of lunar samples and meteorites as well as Mars analogs and terrestrial materials.
- Space weathering: Determining the processes responsible for altering materials in the space environment and measuring the effects of these processes on geologic samples. Derive the evolution of the regolith.
- Dawn Science Team. Participation in planning the mission to study the large asteroids Vesta and Ceres in detail. Principal responsibilities include oversight and integration of remote compositional measurements and development of links to meteorites and understanding of early solar system processes.
- Asteroid - meteorite links: Evaluating observational and experimental data to identify asteroidal source bodies for diverse meteorite types. Science focus is on evolution of the early solar system.
- International collaboration: Quantitative modeling of lunar sample data and geologic analysis of multi-spectral images with scientists at Kharkov University, Ukraine. Spectroscopic analysis of lunar soils, meteorites, and meteorite analogues with several scientists from the Vernadsky Institute, Moscow. Promoting and assisting in planning international exploration with Europe, Japan, Russia, and India.

Mission Involvement:

- Chandrayaan-1 (a mission to the Moon to be launched by the Indian Space Research Organization in early 2008). Prof. Pieters is PI of a US guest instrument, the Moon Mineralogy Mapper (M3), selected by NASA's Discovery Program after an intense peerreview process. She has overall responsibility for the success of this instrument and M3 Science Team activities. M3 is being built by the Jet Propulsion Laboratory.
- Dawn (a Discovery mission being prepared to be launched in 2006/7) Co-Investigator. Participation in planning the mission to study the large asteroids Vesta and Ceres in detail. Principal responsibilities include oversight and integration of remote compositional measurements and development of links to meteorites and understanding of early solar system processes.
- Hera (a proposed Discovery mission to collect samples from a near-earth asteroid). Co-Investigator with principal responsibilities for remote analyses prior to and after sample acquisition to provide geologic context.

Honors, Awards and Elected Offices

- Awarded Gerard P. Kuiper Prize, American Astronomical Society, Division for Planetary Sciences, 2004
- President, ILEWG (International Lunar Exploration Working Group), elected 2002-2004
- Chair, American Association Advancement of Science, Astronomy Section, elected 2002/3
- C. M. Pieters 3 2005
- Elected Fellow, American Geophysical Union, 2001
- Named Klepser Lecturer (University of Tennessee) 2000.
- Named Barringer Lecturer (University of Arkansas) 1999.
- Asteroid 3713 Pieters named in honor
- President, American Geophysical Union, Planetology Section, (elected office), 1996-1998.
- Board of Trustees, Universities Space Research Association (elected member), 1994-1997.
- Chair, Division of Planetary Sciences, American Astronomical Society, (elected office), 1992-1993.
- Secretary, American Geophysical Union, Planetology Section, (elected office), 1986-1988.
- Member, Committee of the Division of Planetary Science, Am. Astron. Soc., (elected office) 1986-1989.
- Chair, Universities Space Research Association, Council of Institutions (elected office), 1985-1986.

Editorships:

- Associate Editor for Meteoritics and Planetary Science 1998-present.
- Member, Editorial Board, Icarus, 1985-1987.
- Associate Editor, Journal of Geophysical Research, 1980-1983.
- Associate Editor, Proceedings Lunar and Planetary Science Conference, 1975, 1981, 1982.

Committees and Service:

- Science Manager, Reflectance Experiment Laboratory (RELAB), Brown University (current)
- Member, Planetary Protection Advisory Committee, NASA Space Science, 2001-present.
- Chair, Solar System Exploration Survey, Inner Planets Panel, NRC/NAS Science Strategy study, 2001-2002.
- Member, American Geophysical Union Fellows Committee, 2001 to present

- Member, External Advisory Board, Arkansas-Oklahoma Center for Space and Planetary Science, 2000-present.
 - Member, Visiting Committee, MIT Department of Earth Atmosphere and Planetary Sciences, 1995-present.
 - Member, Earth-like Planets CSWG, Solar System Exploration Sub committee, 1998-2000.
 - Universities Space Research Association (USRA) Council of Institutions, representative for Brown University [current
 - Member, Space Studies Board, National Academy of Science, 1992-1998.
 - Member, Executive Committee, Space Studies Board, National Academy of Science, 1993-1997.
 - Member, Future of Space Science, Task Group on Research Prioritization; Space Studies Board, National Academy of Science, 1994-1995.
 - Member, Solar System Exploration Subcommittee of the NASA Space Science and Applications Advisory Committee, 1989-1994.
 - Member, Discovery Program Science Working Group, NASA Solar System Exploration Division, 1989-1992.
 - Member, Lunar Exploration Science Working Group of NASA Solar System Exploration Division, 1988-1992.
- C. M. Pieters 4 2005
- Convenor, Lunar and Planetary Science Council, Lunar and Planetary Institute, Houston, 1988-1991.
 - Member, Committee on Planetary and Lunar Exploration (COMPLEX), Space Science Board, National Academy of Science, 1983-1986.
 - Member, Study Team on Terrestrial Planets for the Joint Working Group of the Space Science Board, U.S. National Academy of Science, and the Space Science Committee, European Science Foundation, 1983.