

## BIOGRAPHICAL INFORMATION: SEAN CARL SOLOMON

Born: Los Angeles, California; October 24, 1945

Citizenship: U.S.A.

Business Address: Department of Terrestrial Magnetism  
Carnegie Institution of Washington  
5241 Broad Branch Road, N.W.  
Washington, DC 20015

Phone: 202/478-8850  
Fax: 202/478-8821  
e-mail: scs@dtm.ciw.edu

### EDUCATION

B.S. in geophysics (with honor), California Institute of Technology June 1966  
Ph.D. in geophysics, Massachusetts Institute of Technology (M.I.T.) February 1971

### EMPLOYMENT

Assistant Professor of Geophysics, M.I.T. January 1972-June 1977  
Associate Professor of Geophysics, M.I.T. July 1977-June 1983  
Professor of Geophysics, M.I.T. July 1983-August 1992  
Director, Department of Terrestrial Magnetism, Carnegie Institution of Washington September 1992-present

### VISITING APPOINTMENTS

Visiting Scientist, Lunar Science Institute January 1975  
Physicist (temporary), Lawrence Livermore Laboratory July-August 1978  
Guest Investigator, Woods Hole Oceanographic Institution Summers, 1979-1992  
Visiting Faculty, Institute of Geophysics and Planetary Physics and Department  
of Earth and Space Sciences, University of California, Los Angeles September 1982-June 1983  
Visiting Scientist, Jet Propulsion Laboratory September 1982-June 1983  
Roland and Jane Blumberg Visiting Professor of Planetary Sciences,  
University of Texas at Austin November 1988  
Visiting Associate, Division of Geological and Planetary Sciences,  
California Institute of Technology September 1990-May 1991  
Japan Society for the Promotion of Science Fellow,  
University of Tokyo, Hokkaido University, and Kyushu University September-October 1998

### STUDENT SUPERVISION

Ph.D. theses supervised (1977-1996): 21  
S.M. theses supervised (1973-1987): 5

### HONORS AND AWARDS

Tau Beta Pi 1965  
National Science Foundation Graduate Fellow 1966-1968  
Fannie and John Hertz Foundation Fellow 1968-1971  
National Science Foundation Postdoctoral Fellow 1971-1972  
Alfred P. Sloan Research Fellow 1977-1981  
Fellow, American Geophysical Union 1980  
Fellow, John Simon Guggenheim Memorial Foundation 1982-1983  
Fellow, American Academy of Arts and Sciences 1995  
Fellow, American Association for the Advancement of Science 1995  
President, American Geophysical Union 1996-1998  
Fellow, Geological Society of America 1997  
Arthur L. Day Prize and Lectureship, National Academy of Sciences 1999  
Grove Karl Gilbert Award, Geological Society of America 1999  
Member, National Academy of Sciences 2000  
Public Service Medal, National Aeronautics and Space Administration 2004  
Harry H. Hess Medal, American Geophysical Union 2005  
Distinguished Alumni Award, California Institute of Technology 2006

## HONORARY LECTURESHIPS

Robert H. Lommen Distinguished Lecturer, St. Louis University	1986
W. C. Crumbein Lecturer, Northwestern University and University of Chicago	1992
W. S. Jardetsky Lecturer, Lamont-Doherty Earth Observatory, Columbia University	1994
S. Thomas Crough Memorial Lecturer, Purdue University	1996
J. Tuzo Wilson Lecturer, University of Toronto	1997
Harold Masursky Lecturer, 32 <sup>nd</sup> Lunar and Planetary Science Conference	2001
A. O. C. Nier Memorial Lecturer, University of Minnesota	2003
McDonnell Lecturer, Washington University	2007
Thomas A. Mutch Memorial Lecturer, Brown University	2007
Wilmot Hyde Bradley Lecturer, Geological Society of Washington	2008

## OCEANOGRAPHIC EXPEDITIONS

R/V Argo, Nova Expedition (Southwest Pacific Ocean)	August-October 1967
R/V Atlantis II, Cruise 93 (Southwest Indian Ocean Ridge)	February-March 1976
F/S Meteor, Cruise 45 (Reykjanes Ridge Iceland Seismic Project)	June-July 1977
R/V Robert Conrad, Cruise RC 22 (Rivera Ocean Seismic Experiment)	January-February 1979
R/V Endeavor, Cruise EN-051 (Oceanographer Fracture Zone)	May-June 1980
R/V Knorr, Cruise KN-92 (Mid-Atlantic Ridge, 23°N)	January-March 1982
R/V Knorr, Cruise KN-115 (Mid-Atlantic Ridge, 26°N)	June-July 1985
R/V Oceanus, Cruise OC-180 (Kane Fracture Zone)	December 1986-January 1987
R/V Thomas Washington, RAITT Expedition (East Pacific Rise, 9°30'N)	January-February 1988

## SPACECRAFT MISSION EXPERIENCE

Magellan (previously Venus Orbiting Imaging Radar and Venus Radar Mapper)	
Project Science Group	1982-1994
Radar Investigation Group	1982-1994
Mars Global Surveyor (previously Mars Observer)	
Mars Orbiter Laser Altimeter Team	1986-2005
Principal Investigator, MESSENGER (MErcury Surface, Space ENvironment, GEOchemistry, and Ranging)	1999-present
Co-Investigator, GRAIL (Gravity Recovery and Interior Laboratory)	2007-present

## EDITORIAL EXPERIENCE

Associate Editor, <i>Proceedings of the Lunar and Planetary Science Conference</i>	1976, 1978
Associate Editor, <i>Journal of Geophysical Research</i>	1976-1978
Associate Editor, Proceedings of the Conference on Comparisons of Mercury and the Moon ( <i>Physics of the Earth and Planetary Interiors</i> , 15, 2/3)	1977
Associate Editor, <i>Eos, Transactions of the American Geophysical Union</i>	1979-1981
Editor, Proceedings of the Symposium on Quantitative Methods of Assessing Plate Motions ( <i>Tectonophysics</i> , 74, 1/2)	1981
Editorial Board, <i>Physics and Chemistry of the Earth</i>	1981-1985
Geophysical Monograph Board, American Geophysical Union	1982-1984
Chairman	1983-1984
Associate Editor, <i>Geophysical Research Letters</i>	1986-1988
Editorial Committee, <i>Annual Review of Earth and Planetary Sciences</i>	1993-1997
Board of Advisory Editors, <i>Earth and Planetary Science Letters</i>	2001-2007
Editorial Board, <i>Astrobiology</i>	2001-present

## PROFESSIONAL SOCIETIES

American Geophysical Union	1967-present
American Association for the Advancement of Science	1968-present
Seismological Society of America	1969-present
Geological Society of America	1983-present
Division for Planetary Sciences, American Astronomical Society	1990-present

## PROFESSIONAL COMMITTEES

### National Aeronautics and Space Administration

Lunar Sample Analysis Planning Team	1974-76
Basaltic Volcanism Project, Lunar and Planetary Institute, Team leader for thermal histories of the terrestrial planets	1976-79
Venus Orbital Imaging Radar Science Working Group	1977-78
Lunar and Planetary Review Panel	1980-82
Crustal Dynamics Project Proposal Evaluation Panel	1981
Planetary Geology Working Group	1982-84
Crustal Dynamics Project Working Group	1982-91
Geopotential Research Mission Science Steering Group	1982-87
Planetary Geology Review Panel	1983-84
Chairman, Planetary Geology and Geophysics Working Group	1984-86
Lunar and Planetary Geosciences Review Panel	1984-85, 1986-88
Chairman	1986-88
Space and Earth Science Advisory Committee	1984-87
Solid Earth Geophysics Working Group, Earth Systems Science Committee	1984-85
Mars Rover Sample Return Science Working Group	1987-89
Chairman, Project Steering Committee, Mars: Evolution of Volcanism, Tectonics, and Volatiles	1987-90
Magellan Guest Investigator Review Panel	1990
MESUR (Mars Environmental Survey) Mission Science Definition Team	1991-93
Chairman, Venus Data Analysis Program Review Panel	1992
Planetary Geology and Geophysics Management and Operations Working Group	1992-97, 2000-05
Chairman	1994-97
Terrestrial Planetary Bodies Science Working Group	1994-96
Rosetta Orbiter Review Panel	1995
Mars Microprobe Science Advisory Team, New Millennium Program	1995-97
Solar System Exploration Roadmap Development Team	1996
Solar System Exploration Subcommittee, Space Science Advisory Committee	1996-2000
Task Force on MO&DA and R&A, Space Science Advisory Committee	1997-98
Earth System Science and Applications Advisory Committee	1998-2002
Executive Council, NASA Astrobiology Institute	1998-2008
Chair, Solid Earth Science Working Group	2000-02
Chair, Review Panel for NASA Specialized Centers of Research and Training in Astrobiology	2001-02
Strategic Roadmap Committee for Earth Science and Applications from Space	2004-05
Chair, Planetary Science Subcommittee, NASA Advisory Council	2006-09
Chair, MESSENGER Participating Scientist Review Panel	2006

### National Academy of Sciences/National Research Council

Committee on Planetary and Lunar Exploration, Space Science Board	1976-79
Space Science Board	1978-82
Chairman, Committee on Earth Sciences, Space Science Board	1979-82
Joint U.S.-European Working Group on Cooperation in Planetary Exploration	1982-83
Board on Earth Sciences	1985-88
Steering Committee, RIDGE (Ridge Inter-Disciplinary Global Experiments) Project	1987-90

Committee on Cooperative Mars Exploration and Sample Return, Space Science Board	1987-88
Nominating Committee	2002-03, 2004-05
Class I Membership Committee	2003, 2006-08
Chair, Selection Committee, 2005 Arthur L. Day Prize and Lectureship	2004
Chair, Section 16 (Geophysics)	2005-08
Committee on Grand Research Questions in the Solid-Earth Sciences	2006-07
<b>U. S. Geological Survey</b>	
Earthquake Hazards Reduction Program Peer Review Panel	1975, 1985
<b>Universities Space Research Association</b>	
Lunar and Planetary Science Council	1978-80, 1991-93
<b>International Union of Geodesy and Geophysics</b>	
Convener, Interdisciplinary Symposium on Quantitative Methods of Assessing Plate Motions, XVII General Assembly	1979
<b>Inter-Union Commission on the Lithosphere</b>	
Working Group 1: Recent Plate Movements and Deformation	1981-83
<b>Department of Defense</b>	
Technical Review Panel on Nuclear Test Ban Treaty Verification, DARPA	1981-86
Geophysics Review Panel, Air Force Office of Scientific Research	1984
Board of Visitors, Ocean Sciences Directorate, Office of Naval Research	1993
<b>Association of American Universities</b>	
Steering Committee, Space Science Working Group	1984-91
Chairman	1987-89
<b>American Geophysical Union</b>	
President-Elect and President, Planetology Section	1984-88
Council	1984-88, 1994-2000
Chairman, Editor Search Committee, <i>Journal of Geophysical Research -Solid Earth and Planets</i>	1986, 1988
Harry H. Hess Medal Committee	1990-92
Chairman, Edward A. Flinn Award Committee	1990-92
Fellows Committee	1992-94
President-Elect	1994-96
Executive Committee	1994-98
Past-President	1998-2000
Chairman, Nominations Committee	2000-02
William Bowie Medal Committee	2006-08
<b>National Science Foundation</b>	
Review Panel for IRIS Program Plan	1986
Review Panel for Ocean Drilling Program	1988
Screening Panel, Earth Sciences Division Director	1995
Graduate Fellowship Review Panel	1996
Co-Chair, Solid Earth Working Group, Future of Marine Geosciences Workshop	1996-97
Screening Panel, Ocean Sciences Division Director	2001
Search Committee, Assistant Director for Geosciences	2003
Search Committee, Earth Sciences Division Director	2006
Chair, Review Committee, Ocean Observatories Initiative Scientific Objectives and Network Design	2006, 2007
Advisory Committee for Geosciences	2006-08
Chair, Committee of Visitors, Deep Earth Processes Section	2008

### **Department of Energy**

Geosciences Research Council	1986-87
Physical Sciences Advisory Committee, Lawrence Livermore National Laboratory (LLNL)	1993-94
Environmental Programs Scientific Advisory Committee, LLNL	1995-98
Chair, Earth and Environmental Sciences Directorate Advisory Committee, LLNL	1998-2000
Energy and Environment Directorate Scientific Advisory Committee, LLNL	2001

### **Incorporated Research Institutions for Seismology**

Standing Committee for the Global Seismic Network	1987-90
Chairman	1988-90
Science Task Force	1995

### **Geological Society of America**

G. K. Gilbert Award Committee	2002-03
Arthur L. Day Medal Committee	2003-04

### **Academic and Institutional Review Committees**

Committee to Visit the Department of Earth and Planetary Sciences, Harvard University	1993-99, 2002-05
Review Team, Laboratory for Terrestrial Physics, NASA Goddard Space Flight Center	1993
Visiting Committee, National Astronomy and Ionosphere Center, Arecibo Observatory, Cornell University	1995-98
Visiting Committee, School of Earth and Atmospheric Sciences, Georgia Institute of Technology	1996, 2003
Geoscience Evaluation Panel, Danish National Research Foundation	1997
Chair, Academic Review Committee, Department of Geosciences, Princeton University	1998
External Review Committee, MIT/WHOI Joint Program in Oceanography and Applied Ocean Science and Engineering	1998, 2004, 2009
Chair	1998
Institutional Review Committee, Scripps Institution of Oceanography	1999
Physical and Mathematical Sciences and Environmental Studies Cluster Review Committee, Brown University	1999
Chair, External Advisory Committee for Geology and Geophysics, Rice University	2000
Advisory Committee, Institute of Earth Sciences, Academia Sinica, Taiwan	2000-05
Chair	2002-05
Academic Program Review Committee, Department of Geosciences, University of Arizona	2001
External Assessment Team, Department of Earth and Environmental Sciences, Columbia University	2001
Scientific Advisory Board, Max Planck Institute for Chemistry	2001-09
Advisory Committee, Center for Integrative Planetary Science, University of California, Berkeley	2003-06
Advisory Council, Southern California Earthquake Center	2003-07
Chair	2004-07
Visiting Committee, Earth Sciences Directorate, NASA Goddard Space Flight Center	2003
External Review Committee, Department of Geology, University of Maryland	2003
Visiting Committee, Harvard-Smithsonian Center for Astrophysics	2004, 2007
External Advisory Board, The Earth Institute, Columbia University	2004-08
External Review Committee, School of Earth and Environmental Sciences, Seoul National University	2005
Visiting Committee, Berkeley Geochronology Center	2005
Chair, External Review Committee, Department of the Geophysical Sciences, University of Chicago	2005
Chair, External Advisory Committee, Department of Earth Science, Rice University	2005
Chair, External Review Committee, Department of Earth and Planetary Sciences, Washington University	2007