

SUSAN SOLOMON

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Education:

Illinois Institute of Technology, Chicago, Illinois – B.S. in Chemistry, 1977.
Graduation with high honors.

University of California, Berkeley, California – M.S. in Chemistry, 1979; Ph.D. in
Chemistry, 1981.

Professional Employment:

Lee and Geraldine Martin Professor of Environmental Studies, Department of
Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of
Technology 2017-present; Ellen Swallow Richards Professor, Department of
Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of
Technology 2012-2017.

Founding Director, MIT Environmental Solutions Initiative, May 2014-October,
2015.

Research Chemist at the Aeronomy Laboratory, National Oceanic and
Atmospheric Administration, Boulder, 1981–1991. Senior Scientist, Aeronomy
Laboratory (now called the Chemical Sciences Division), 1991–2011. Program
Leader, Middle Atmosphere group (renamed to Chemistry and Climate Processes
group) 1988–2011.

Acting Director, Atmospheric Chemistry Division, National Center for
Atmospheric Research, Boulder, November 1995–November 1996.

Other Major Professional Affiliations:

Affiliate Scientist, National Center for Atmospheric Research, Boulder, 1992–
2006.

Adjunct Professor, Department of Astrophysical, Planetary and Atmospheric
Sciences, University of Colorado, Boulder 1982–2012. Principal research advisor

for two M.S. students and five Ph.D. students; often serves as a member on University of Colorado thesis committees. Frequently guest lectures for undergraduate chemistry and atmospheric science classes. Team-teaches graduate courses on atmospheric chemistry.

Head project scientist, National Ozone Expedition, McMurdo Station, Antarctica, August–November, 1986 (NOZE-1) and August–November, 1987 (NOZE-2).

Co-chair, Working Group 1, Intergovernmental Panel on Climate Change (IPCC), April 2002–September 2008.

Visiting Scholar, Atmospheric Sciences Department, University of Washington, Seattle, WA March–June, 2008. Provided graduate course covering the science and policy of ozone depletion and climate change and contrasts between them.

Current Research Interests:

Chemistry and chemistry/climate coupling processes in the stratosphere and troposphere. Interpretation of ozone depletion at mid-latitudes and in polar regions. Coupling between trace gases and the Earth's climate system.

Honors and Awards:

UCAR (University Corporation for Atmospheric Research) Fellow, 1977–1978.

Elected outstanding teaching assistant by the Berkeley freshman chemistry class of September 1977.

James B. MacElwane award, American Geophysical Union, 1985.

Gold Medal for exceptional service, U. S. Department of Commerce, 1989.

Henry G. Houghton award for excellence in research, American Meteorological Society, January 1991.

Common Wealth Award for Excellence in Science and Invention, April 1992.

Member, National Academy of Sciences, April 1992 – present.

Scientist of the Year, R&D Magazine, Cahners Publications, September 1992.

Fellow, American Academy of Arts and Sciences, April 1993 – present.

Honorary doctorate, University of Colorado, Boulder, Colorado, May 1993.

Arthur S. Flemming award for excellence in government service, May 1994.

Honorary doctorate, Tulane University, New Orleans, LA, May 1994.

H. J. Reid award, NASA Langley Research Center, August 1994.

Solomon Glacier (78°23'S, 162°30'E) and Solomon Saddle (78°23'S, 162°39'E) were named in honor of leadership in Antarctic research, 1994.

Associé étranger (Foreign associate), Academie des Sciences de France, 1995 – present.

Honorary doctorate, Williams College, Williamstown, MA, June 1996.

Stratospheric Ozone Protection Award of the Environmental Protection Agency, October 1996.

United Nations Environment Programme (UNEP) Award for key contributions to the development of the Montreal Protocol, September 1997.

Co-recipient, Climate Protection Award of the Environmental Protection Agency, October 1998.

Carl-Gustaf Rossby Research Medal, highest award of the American Meteorological Society, January 2000.

Foreign Member, Academia Europaea, 2000 – present.

U. S. National Medal of Science, 1999; award presented in March 2000.

Award of the Bonfils-Stanton Trust, Denver, CO, April 2001.

ARCS Woman of the Year, Denver Chapter, April 2001.

Honorary doctorate, Illinois Institute of Technology, May 2001.

Honorary doctorate, State University of New York at Stony Brook, May 2001.

Weizmann Women and Science Award, presented at Rockefeller University, June 2002.

Gold Medal, Department of Commerce, for contributions as a leading author of the third assessment report of the Intergovernmental Panel on Climate Change, 2002.

Distinguished Presidential Rank Award, May 2003.

Honorary doctorate, University of Miami, May 2003.

Honorary doctorate, University of East Anglia, Norwich, UK, July 2004.

Blue Planet Laureate, Asahi Glass Foundation, Tokyo, Japan, November 2004.

Honorary Member, International Polar Foundation, January 2005.

UNEP/WMO Vienna Convention Award for outstanding contributions to the Vienna Convention for the Protection of the Ozone Layer, November 2005.

Member, Colorado Women's Hall of Fame, March 2006.

Fellow, Royal Society of Chemistry, April 2006.

Honorary doctorate, Northwestern University, June 2006.

Goldschmidt Award, highest honor of the Geochemical Society, August 2006.

Alumni Achievement Award, University of California, Berkeley, March 2007.

Lowell Thomas Award, Explorers Club, New York, October 2007.

Lemaitre Prize, Foundation Georges Lemaitre, Brussels, Belgium, November 2007.

The Nobel Peace Prize for 2007 was awarded to the Intergovernmental Panel on Climate Change (IPCC) and Mr. Albert Gore, Junior. As co-chair of IPCC Working Group One, Susan Solomon led the process that produced the highly influential IPCC Working Group One Fourth Assessment Climate Science Report [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2007.]

Bowie Medal, highest honor of the American Geophysical Union, December 2007.

Listed by Time magazine as one of the 100 most influential people in the world in 2008.

Fellow, American Philosophical Society, April 2008.

Fellow, Royal Society of London, May 2008.

Honorary doctorate, Butler University, May 2008.

Honorary Fellow, Geological Society of London, September 2008.

Distinguished Presidential Rank Award, October 2008.

American Geological Institute Award for Advancing Public Understanding of the Geosciences, October 2008.

Grande Medaille, Academie des Sciences de France, November 2008.

John Scott Award, John Scott Foundation Trust, Philadelphia, PA, November 2008.

Member, National Women's Hall of Fame, March 2009.

Honorary doctorate, University of Pennsylvania, May 2009.

Honorary doctorate, Reading University, UK, July 2009.

Volvo Environment Prize, November 2009.

Honorary doctorate, University of Paris, March 2010.

Listed by Good Housekeeping magazine as one of the 125 women who changed the world, May 2010.

Honorary doctorate, University of Athens, June 2010.

Career Achievement Award, Service to America Awards of the Partnership for Public Service, September 2010.

Chevalier, Legion d'honneur, Republique de France, November 2010.

Honorary doctorate, Smith College, May, 2012.

Honorary Member, American Meteorological Society, October, 2012.

Vetlesen Prize, Vetlesen Foundation, February, 2013.

Honorary Member, American Polar Society, April, 2013.

BBVA Frontiers of Knowledge Prize, BBVA Foundation, June, 2013.

Honorary doctorate, Leeds University, UK, July, 2013.

Honorary doctorate, Brown University, May, 2015.

Illinois Institute of Technology Hall of Fame, September, 2015.

Honorary doctorate, University of British Columbia, November, 2015.

Honorary fellow, Royal Meteorological Society, UK, April, 2017.

Arthur L. Day Prize and Lectureship, National Academy of Sciences, April, 2017.

Bakerian Medal and Lecture, Royal Society, (March, 2018).

Crafoord Prize, Swedish Academy of Sciences (May, 2018).

Honorary doctorate, Rockefeller University, NY (June, 2018).

Killian Award, MIT (Highest award to MIT faculty, April, 2021).

National Academy of Sciences Award for Chemistry in Service to Society (April, 2021).

Award for outstanding MIT undergraduate 2020 summer research mentors, May, 2021

Member, Pontifical Academy of Sciences, August, 2021.

Future of Life Award, Futureoflife.org, “celebrating unsung heroes of our time”, September, 2021.

Honorary doctorate, Oxford University, June, 2022.

Awards for Specific Scientific Studies:

NOAA Environmental Research Laboratories outstanding scientific publication award for “Transport process and ozone perturbations,” by Solomon, Garcia and Stordal, *J. Geophys. Res.*, 90, 12981-12989, 1985.

NOAA Environmental Research Laboratories outstanding scientific publication award for “Visible Spectroscopy at McMurdo Station, 2. Observations of OCIO,” by Solomon, Mount, Sanders, and Schmeltekopf, *J. Geophysical Res.*, 92, 8329-8338, 1987.

NOAA Environmental Research Laboratories outstanding review publication award for “The Mystery of the Antarctic Ozone Hole,” by S. Solomon, *Rev. Geophys.*, 26, 131-148, 1988.

NCAR outstanding publication award for “Transport of nitric oxide and the D-region winter anomaly,” by Garcia, Solomon, Avery and Reid, *J. Geophys. Res.*, 92, 977-994, 1987.

NOAA Environmental Research Laboratories outstanding scientific publication award for “On the evaluation of ozone depletion potentials,” by Solomon, Mills, Heidt, and Tuck, *J. Geophys. Res.*, 97, 825, 1992.

NOAA Environmental Research Laboratories outstanding scientific publication award for “Atmospheric lifetimes of long-lived species,” by Ravishankara, Solomon, Turnipseed, and Warren, *Science*, 259, 194-199, 1993.

NOAA Environmental Research Laboratories outstanding scientific publication award for “Role of aerosol variations in anthropogenic ozone depletion in polar regions,” by Portmann, Solomon, Garcia, Thomason, Poole, and McCormick, *J. Geophys. Res.*, 101, 22991-23006, 1996.

NOAA Environmental Research Laboratories outstanding scientific review paper award for “Stratospheric Ozone Depletion: A Review of Concepts and History,” by S. Solomon, *Reviews of Geophysics*, 37, 275-316, 1999.

NOAA OAR outstanding scientific publication award for “Interpretation of recent Southern Hemisphere climate change,” by Thompson and Solomon, *Science*, 296, 895-899, 2002.

NOAA OAR outstanding scientific publication award for “Detection of human influence on twentieth-century precipitation trends,” by Zhang, Zwiers, Hegerl, Lambert, Gillet, Solomon, Stott, and Nozawa, *Nature*, 448, 461-465, 2007.

NOAA OAR outstanding scientific publication special award for “Technical Summary, *Climate Change 2007: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change,” Solomon and 30 coauthors, Cambridge University Press, 74 pp., 2007.

Professional Societies:

Fellow, American Geophysical Union

Fellow, American Meteorological Society

Fellow, Royal Meteorological Society

Member, American Chemical Society

Fellow, Royal Society of Chemistry

Honorary Fellow, International Polar Foundation

Honorary Fellow, The Geological Society (London)

Fellow, American Philosophical Society

Editorships, Committees, Science Teams, etc.:

Co-Investigator, Solar Mesosphere Explorer (SME) satellite, 1981–1986.

Co-Investigator, Earth Observing System (EOS) theoretical project with W. L. Grose, NASA Langley, project selected for EOS science team, 1988–1995.

Associate Editor, Journal of the Atmospheric Sciences, 1983–1986.

Member, Editorial Board, Planetary and Space Science, 1989–1992.

Associate Editor, Journal of Geophysical Research 1985–1991.

Associate Editor, Geophysical Research Letters, 1987–1991.

Guest Editor, John F. Noxon memorial issue of the Journal of Geophysical Research, 1985–1986.

Guest Editor, Polar ozone issue of Geophysical Research Letters, 1988.

Member, Committee on Solar and Space Physics of the National Academy of Sciences 1983–1986.

Member, American Meteorological Society Committee on the Middle Atmosphere, 1986–1987.

Member, Space and Earth Science Advisory Committee (SESAC) of the National Aeronautics and Space Administration, 1985–1988.

Member, Science and Technology advisory committee for Congressman David Skaggs, 1988–1994.

Member, Polar Research Board, National Academy of Sciences, 1989–1993.

Chairperson, Scientific Advisory Committee, Division of Polar Programs, National Science Foundation, 1990–1992.

Member, Scientific Advisory Committee, Climate and Global Change Program, NOAA, 1991–present.

Member, National Research Council review panel for the Air Force Office of Scientific Research, 1988–1990.

Member, MacElwane Award Committee, American Geophysical Union, 1988–1989.

Member, SPEC Review Panel, Atmospheric Chemistry Division of NCAR, 1990.

Member, NCAR-wide Review Panel, 1992.

Member, Steering Committee for the Network for Detection of Stratospheric Change, 1990–1995.

Member, International Ozone Commission, 1992–2008.

Member, Stratospheric Processes and their Role in Climate (SPARC) steering committee, World Climate Research Programme, 1993–1998.

Member, Scientific Review Panel for the NASA Langley Aerosol Research Branch, August, 1990.

Chair, Visiting Review Committee for Code 916, NASA Goddard Space Flight Center, March, 1997.

Co-principal Lecturer and Co-organizer, NCAR Summer Colloquium on “Chemistry of the lower and middle atmosphere,” July 8–25, 1986.

Co-principal Lecturer, NCAR Summer Colloquium on Atmospheric Chemistry, June 3–12, 1991.

Co-principal Lecturer and Organizer, NASA-sponsored workshop on middle atmosphere chemistry, Keystone, Colorado, July, 1987.

Chairperson, Polar Ozone Chapter, United Nations Environmental Program/World Meteorological Organization assessment of the state of the ozone layer, 1989.

Member, Theory Team, Airborne Arctic Stratosphere Experiment (AASE), Stavanger, Norway, January–February, 1989.

Member, Advisory Committee, Airborne Arctic Stratosphere Experiment II (AASE II), Bangor, Maine, November 1991–March 1992.

Chairperson, Ozone depletion potentials chapter, United Nations Environmental Program/World Meteorological Organization assessment of the state of the ozone layer, 1991.

Chairperson, Ozone depletion potentials and global warming potentials chapter, United Nations Environment Program/World Meteorological Organization assessment of the state of the ozone layer, 1994.

Member, NAS/NRC Committee on Antarctic Policy and Science, January–June, 1993.

Member, NAS/NRC Committee on High Speed Civil Transportation, January–October, 1993.

Member, NAS/NRC Committee on International Organizations and Programs, 1994–1997.

Member, NAS Nominating Committee, 1995.

Member, Special Blue Ribbon Panel on Antarctic Science in the 21st Century, National Science Foundation, 1995–6.

Member, Joint Scientific Committee (JSC), World Climate Research Programme (WCRP), 1996–2001.

Member, NAS/NRC Committee on Women in Science and Engineering (CWSE), 1996–1999.

Featured lecturer at NATO Advanced Study Institute on “The Stratosphere and Its Role in the Climate System,” Quebec, Canada, September, 1996.

Chairperson, search committee for NSF Geosciences Associate Director, 1999.

Chairperson, search committee for NCAR Atmospheric Chemistry Division Director, 2000.

Author, Intergovernmental Panel on Climate Change (IPCC) reports, 1994, 1996, 2001.

Co-convenor, Chapman Conference on the Absorption of Solar Radiation, Estes Park, Colorado, August, 2001.

Guest lecturer at Department of Applied Mathematics and Theoretical Physics summer institute in fluid dynamics, Cambridge, UK, September, 2001.

Co-chair, National Academy of Sciences Temporary Nominating Group on Global Human and Environmental Sciences, 2000–2003.

Chairperson and Member, American Meteorological Society Atmospheric Research Awards Committee, 2001–2002.

Co-chair, Working Group I Intergovernmental Panel on Climate Change (IPCC), April 2002–September 2008.

Member, National Academy of Sciences Temporary Nominating Group for Younger Nominees, Class I, 2003–2006.

Member, National Research Council committee on Strategic Guidance for NSF's Support of the Atmospheric Sciences, 2004–2007.

Member, National Academy of Sciences Geophysics Section Diversity Committee, 2007–present.

Member, Bowie Medal Committee, American Geophysical Union, 2009–2010.

Member, National Research Council Committee on America's Climate Choices, 2008–2011.

Chair, National Research Council Committee on Climate Change Stabilization Targets, 2009–2010.

Member, American Chemical Society Committee on Climate Change Science, 2011–2012.

Member, international advisory committee, University of Paris VI, 2012–2013.

Member, joint Royal Society/National Academy of Sciences study panel on climate change, 2013–2014.

Member, Steering Committee for the 2014 International UNEP/WMO Scientific Assessment of Ozone Depletion, 2013–2014.

Member, organizing committee for NAS/NRC workshop on Antarctic sea ice change, Boulder, July 2015–Jan 2016.

Member, Science and Security Board, Bulletin of the Atomic Scientists, 2016–

Review Editor for the International UNEP/WMO Scientific Assessment of Ozone Depletion, 2016–2017.

Review Editor for the International UNEP/WMO Scientific Assessment of Ozone Depletion, 2021-2023.

Journal Publications:

Susan Solomon was named the third most highly cited geoscientist in the world during the decade of the 1990s by Science Watch in December, 2001.

Her publication record is as follows:

Fishman, J., Solomon, S., Crutzen, P. J., Observational and theoretical evidence in support of a significant in situ photochemical source of tropospheric ozone, *Tellus*, 31 (5) 432-446, 1979. doi: 10.3402/tellusa.v31i5.10458

Johnston, H. S. Solomon, S., Thunderstorms as possible micrometeorological sink for stratospheric water, *Journal of Geophysical Research: Oceans*, 84 (C4) 3155-3158, 1979. doi: 10.1029/jc084ic06p03155

Crutzen, P. J. Solomon, S., Response of mesospheric ozone to particle precipitation, *Planetary and Space Science*, 28 (12) 1147-1153, 1980.

Solomon, S., Johnston, H. S., Kowalczyk, M., Wilson, I., Instantaneous global ozone balance including observed nitrogen dioxide, *Pure and Applied Geophysics*, 118 (1) 58-85, 1980. doi: 10.1007/BF01586446

Solomon, S. Crutzen, P. J., Analysis of the August 1972 solar proton event including chlorine chemistry, *Journal of Geophysical Research*, 86 (C2) 1140-1146, 1981. doi: 10.1029/JC86iC02p01140

Rusch, D. W., Gerard, J. C., Solomon, S., Crutzen, P. J., Reid, G. C., The effect of particle precipitation events on the neutral and ion chemistry of the middle atmosphere - I. Odd nitrogen, *Planetary and Space Science*, 29 (7) 767-774, 1981. doi: 10.1016/0032-0633(81)90048-9

Solomon, S., Rusch, D.W., Gerard, J. C., Reid, G. C., Crutzen, P. J., The effect of particle precipitation on the neutral and ion chemistry of the middle atmosphere - II. Odd hydrogen, *Planetary and Space Science*, 29 (8) 885-893, 1981. doi: 10.1016/0032-0633(81)90078-7

Solomon, S., Crutzen, P. J., Roble, R. G., Photochemical coupling between the thermosphere and the lower atmosphere I. Odd nitrogen from 50 to 120 km, *Journal of Geophysical Research: Oceans*, 87 (C9) 7206-7220, 1982. doi: 10.1029/JC087iC09p07206

- Solomon, S., Reid, G. C., Roble, R. G., Crutzen, P. J., Photochemical coupling between the thermosphere and the lower atmosphere II. D region ion chemistry and winter anomaly, *Journal of Geophysical Research: Oceans*, 87 (C9) 7221-7227, 1982. doi: 10.1029/JC087iC09p07221
- Solomon, S., Ferguson, E. E., Fahey, D. W., Crutzen, P. J., On the chemistry of H₂O, H₂ and meteoritic ions in the mesosphere and lower thermosphere, *Planetary and Space Science*, 30 (11) 1117-1126, 1982. doi: 10.1016/0032-0633(82)90122-2
- Garcia, R. R., Solomon, S., A numerical model of the zonally averaged dynamical and chemical structure of the middle atmosphere, *Journal of Geophysical Research: Oceans*, 88 (C2) 1379-1400, 1983. doi: 10.1029/JC088iC02p01379
- Solomon, S., The possible effects of translationally excited nitrogen atoms on lower thermospheric odd nitrogen, *Planetary and Space Science*, 31 (1) 135-139, 1983. doi: 10.1016/0032-0633(83)90038-7
- Solomon, S., Minor constituents in the stratosphere and mesosphere, *Review of Geophysics*, 21 (2) 276-283, 1983. doi: 10.1029/RG021i002p00276
- Solomon, S., Reid, G. C., Rusch, D. W., Thomas, R. J., Mesospheric ozone depletion during the solar proton event of July 13, 1982, Part II. Comparison between theory and measurements, *Geophysical Research Letters*, 10 (4) 257-260, 1983. doi: 10.1029/GL010i004p00257
- Solomon, S., Rusch, D. W., Thomas, R. J., Eckman, R. S., Comparison of mesospheric ozone abundances measured by the solar mesosphere explorer and model calculations, *Geophysical Research Letters*, 10 (4) 249-252, 1983. doi: 10.1029/gl010i004p00249
- Solomon, S., Garcia, R. R., On the distribution of nitrogen dioxide in the high latitude stratosphere, *Journal of Geophysical Research: Atmospheres*, 88 (C9) 5229-5239, 1983. doi: 10.1029/JC088iC09p05229
- Solomon, S., Garcia, R. R., Simulation of NO_x partitioning along isobaric parcel trajectories, *Journal of Geophysical Research: Oceans*, 88 (C9) 5497-5501, 1983. doi: 10.1029/JC088iC09p05497
- Garcia, R. R., Solomon, S., Roble, R. C., Rusch, D. W., A numerical model study of the response of the middle atmosphere to the 11-year solar cycle, *Planetary and Space Science*, 32 (4) 411-423, 1984. doi: 10.1016/0032-0633(84)90121-1
- Russell, J. M., Solomon, S., Gordley, L. L., Remsberg, E. E., Callis, L. B., The variability of stratospheric and mesospheric NO₂ in the polar winter night observed by LIMS, *Journal of Geophysical Research: Atmospheres*, 89 (D5) 7267-7275, 1984. doi: 10.1029/JD089iD05p07267

- Solomon, S., Garcia, R. R., Transport of thermospheric NO to the upper stratosphere?, *Planetary and Space Science*, 32 (4) 399-409, 1984. doi: 10.1016/0032-0633(84)90120-X
- Solomon, S., Garcia, R. R., On the distribution of long lived tracers and chlorine species in the middle atmosphere, *Journal of Geophysical Research: Atmospheres*, 89 (D7) 11633-11644, 1984. doi: 10.1029/JD089iD07p11633
- Solomon, S., Mount, G. H., Zawodny, J. M., Measurements of stratospheric NO₂ from the solar mesosphere explorer satellite II. General morphology of observed NO₂ and derived N₂O₅, *Journal of Geophysical Research: Atmospheres*, 89 (D5) 7317-7321, 1984. doi: 10.1029/JD089ID01P01327
- Thomas, R. J., Barth, C. A., Solomon, S., Seasonal variations of ozone in the upper mesosphere and gravity waves, *Geophysical Research Letters*, 11 (7) 673-676, 1984. doi: 10.1029/GL11I007P00673
- Garcia, R. R., Solomon, S., The effect of breaking gravity waves on the dynamics and chemical composition of the mesosphere and lower thermosphere, *Journal of Geophysical Research: Atmospheres*, 90 (D2) 3850-3868, 1985. doi: 10.1029/JD090ID02P03850
- Solomon, S., Garcia, R. R., Olivero, J. J., Bevilacqua, R. M., Schwartz, P. R., Clancy, R. T., Muhleman, D. O., Photochemistry and transport of carbon monoxide in the middle atmosphere, *Journal of Atmospheric Sciences*, 42 (10) 1072-1083, 1985. doi: 10.1175/1520-0469(1985)042<1072:PATOCM>2.0.CO;2
- Solomon, S., Garcia, R. R., Stordal, F., Transport processes and ozone perturbations, *Journal of Geophysical Research: Atmospheres*, 90 (D7) 12981-12989, 1985. doi: 10.1029/JD090ID07P12981
- Austin, J., Garcia, R. R., Russell, J. M., Solomon, S., Tuck, A. F., On the atmospheric photochemistry of nitric acid, *Journal of Geophysical Research: Atmospheres*, 91 (D5) 5477-5485, 1986. doi: 10.1029/JD091iD05p05477
- Kiehl, J. T., Solomon, S., On the radiative balance of stratosphere, *Journal of the Atmospheric Sciences*, 43 (14) 1525-1534, 1986. doi: 10.1175/1520-0469(1986)043<1525:OTRBOT>2.0.CO;2
- Reid, G. C., Solomon, S., On the existence of an extraterrestrial source of water vapor in the middle atmosphere, *Geophysical Research Letters*, 13 (11) 1129-1132, 1986. doi: 10.1029/GL013i011p01129

- Solomon, S., Russell, J. M., Gordley, L. L., Observations of the diurnal variation of nitrogen dioxide in the stratosphere, *Journal of Geophysical Research: Atmospheres*, 91 (D5) 5455-5464, 1986. doi: 10.1029/JD091iD05455
- Solomon, S., Garcia, R. R., Rowland, F. S., Wuebbles, D. J., On the depletion of Antarctic ozone, *Nature*, 321 (6072) 755-758, 1986. doi: 10.1038/3217dda0
- Solomon, S., Kiehl, J. T., Garcia, R. R., Grose, W., Tracer transport by the diabatic circulation deduced from satellite observations, *Journal of Atmospheric Sciences*, 43 (15) 1603-1617, 1986. doi: 10.1175/1520-0469(1986)043<1603:TTBTDC>2.0.CO;2
- Solomon, S., Kiehl, J. T., Kerridge, B. J., Remsberg, E. E., Russell III, J. M., Evidence for non-local thermodynamic equilibrium in the V₃ mode of mesospheric ozone, *Journal of Geophysical Research: Atmospheres*, 91 (D9) 9865-9876, 1986. doi: 10.1029/JD091iD09p09865
- Bjarnason, G. G., Solomon, S., Garcia, R. R., Tidal influences on vertical diffusion and diurnal variability of ozone in the mesosphere, *Journal of Geophysical Research: Atmospheres*, 92 (D1) 5609-5620, 1987. doi: 10.1029/JD092iD05p05609
- Garcia, R. R., Solomon, S., Avery, S. K., Garcia, R. R., Transport of nitric oxide and the D-region winter anomaly, *Journal of Geophysical Research: Atmospheres*, 92 (D1) 977-994, 1987. doi: 10.1029/JD092iD01p00977
- Garcia, R. R., Solomon, S., A possible relationship between interannual variability in Antarctic ozone and the quasi-biennial oscillation, *Geophysical Research Letters*, 14 (8) 848-851, 1987. doi: 10.1029/GL014i008p00848
- Le Texier, H., Solomon, S., Garcia, R. R., Seasonal variability of the OH Meinel bands, *Planetary and Space Science*, 35 (8) 977-989 1987. doi: 10.1016/0032-0633(87)9002-X
- Roble, R. G., Emery, B. A., Killeen, T. L., Reid, G. C., Solomon, S., Garcia, R. R., Evan, D. S., Hays, P. B., Carignan, G. R., Heelis, R. A., Hanson, W. B., Winningham, D. J., Spencer, N. W., Brace, L. H., Joule heating in the mesosphere and thermosphere during the July 13, 1982 solar proton event, *Journal of Geophysical Research: Space Physics*, 92 (A6) 6083-6090, 1987. doi: 10.1029/JA092iA06p06083
- Solomon, S., Schmelekopf, A. L., Sanders, R. W., On the interpretation of zenith sky absorption measurements, *Journal of Geophysical Research: Atmospheres*, 92 (D7) 8311-8319, 1987. doi: 10.1029/JD092iD07p08311

- Mount, G. H., Sanders, R. W., Schmeltekopf, A. L., Solomon, S., Visible spectroscopy at McMurdo Station, Antarctica, 1. Overview and daily variations of NO₂ and O₃, austral spring, 1986, *Journal of Geophysical Research: Atmospheres*, 92 (D7) 8320-8328, 1987. doi: 10.1029/JD092iD07p08320
- Solomon, S., Mount, G. H., Sanders, R. W., Schmeltekopf, A. L., Visible spectroscopy at McMurdo Station, Antarctica, 2. Observation of OCIO, *Journal of Geophysical Research: Atmospheres*, 92 (D7) 8329-8338, 1987. doi: 10.1029/JD092iD07p08329
- Sanders, R. W., Solomon, S., Mount, G. H., Bates, M. W., Schmeltekopf, A. L., Visible spectroscopy at McMurdo Station Antarctica, 3. Observations of NO₃, *Journal of Geophysical Research: Atmospheres*, 92 (D7) 8339-8342, 1987. doi: 10.1029/JD092iD07p08339
- Solomon, S., Garcia, R.R., Current understanding of mesospheric transport processes, *Philosophical Transactions of the Royal Society of London Series A*, 323 655-666, 1987. doi: 10.1098/rsta.1987.0112
- Spear, K. A., Solomon, S., Mesospheric ionization and O₂ (¹Δ_g) depletion, *Planetary and Space Science*, 35 (8) 1087-1091, 1987. doi: 10.1016/0032-0633(87)90013-4
- Le Texier, H., Solomon, S., Garcia, R. R., The role of molecular hydrogen and methane oxidation in the water vapor budget of the stratosphere, *Quarterly Journal of the Royal Meteorological Society*, 114 (480) 281-295, 1988. doi: 10.1002/qj.49711448002
- Sanders, R. W., Solomon, S., Carroll, M. A., Schmeltekopf, A. L., Ground-based measurements of O₃, NO₂, OCIO, and BrO during the 1987 Antarctic ozone depletion event, *Polar Ozone Workshop*, 118, 1988.
- Solomon, S., The mystery of the Antarctic ozone "Hole", *Review of Geophysics*, 26 (1) 131-148, 1988. doi: 10.1029/RG026i001p00131
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Books:

Brasseur, G., Solomon, S., *Aeronomy of the Middle Atmosphere*, Reidel Pub., Co., Dordrecht, 1984. (in English, also translated into Russian and Chinese). Second edition, 1986. Third edition, 2005.

Solomon, S., *The Coldest March*, Yale University Press, New Haven and London, 2001. [selected for the prestigious '2001 Books of the Year' lists of the New York Times, the Economist (UK), and the Independent (UK)]. Finalist, Independent Publishers' Book Awards, 2001. Winner, Colorado Book Award, 2002. Louis Battan Prize of the American Meteorological Society, 2003.]

Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2007. [2007 Association of Atmospheric Science Librarians International award for high impact comprehensive publication]

Selected Seminars and Presentations:

S. Solomon and R. R. Garcia, Numerical Modeling of the Dynamics and Chemistry of the Middle Atmosphere (Invited), Sixth ESA-PAC Meeting, Interlaken, Switzerland, April 1983

S. Solomon, Chemical Coupling of the Strato - Meso - Thermosphere System (Invited), IUGG-IAMAP, Hamburg, Germany, August 1983

S. Solomon and R.W. Sanders, Some Needs for Measurement of Photon Cross Sections and Reaction Rates in the Lower Thermosphere/Mesosphere (Invited), Fall AGU Meeting, San Francisco, California, December 1985

S. Solomon, Photochemistry and Transport in the Mesosphere (Invited), Royal Society discussion meeting on the middle atmosphere, London, December 1986

Testimony on ozone depletion before the Subcommittee on Health and the Environment, U.S. House of Representatives, March 1987

Testimony on ozone depletion before the Subcommittee on Natural Resources, Agricultural Research and Environment, U.S. House of Representatives, March 1987

S. Solomon, The Hole in the Sky, Benjamin Franklin Lecturer, National Academy of Sciences, April 1987

Testimony on ozone depletion before the Subcommittee on Environmental Protection and Subcommittee on Hazardous Waste and Toxic Substances, U.S. Senate, May 1987

S. Solomon, The National Ozone Expedition, Invited Lecturer at the Center for Global Habitability, Columbia University, May 1987

S. Solomon, Results from the National Ozone Expeditions, 1986-1987 (Invited), Royal Meteorological Society, discussion meeting on Antarctic Ozone, London, February 1988

S. Solomon, Antarctic Ozone Depletion, President's Forum on Global Change, NAS, Woods Hole, Mass., July 1988

S. Solomon, Ozone Depletion (Invited), American Chemical Society Regional Meeting, Cincinnati, OH, November 1988

Testimony on ozone depletion before the Subcommittee on Science, Technology and Space, U. S. Senate, February 1989

S. Solomon, Ozone Depletion at the Ends of the Earth, Fermilab, Batavia, Illinois, January 1989

S. Solomon, Global Ozone Depletion, Invited lecture at the National Academy Forum on Global Change, Washington, D. C., May 1989

S. Solomon, Ozone Depletion, Midland, Michigan town festival of arts and sciences, June 1989

S. Solomon, Polar Ozone Depletion, Elizabeth M. Laird Memorial Lecture, University of Western Ontario, London, Canada, October, 1989

S. Solomon, Ozone Depletion, Invited lecture at the American Meteorological Society Annual Meeting, Anaheim, CA, February, 1990

- S. Solomon, Ozone Depletion, Invited lecture at the Washington Interparliamentary Conference on Global Change, May 1990
- S. Solomon, Ozone Depletion, Lecture at the National Library, Wellington, New Zealand, at the invitation of the U. S. Embassy, October 9, 1990
- S. Solomon, Heterogeneous Processes and Ozone Depletion, Invited lecture at the Gordon Conference on Atmospheric Chemistry, New Hampton, NH, June 20, 1991
- S. Solomon, Global Ozone Depletion: A Brief Review, Invited lecture at the American Meteorological Society Meeting, Atlanta, GA, January 8, 1992
- S. Solomon, Ozone Depletion at the Ends of the Earth and Points In Between, Plenary Lecture at the American Association for the Advancement of Science Meeting, Chicago, IL, February 10, 1992
- S. Solomon, New Findings on Stratospheric Ozone, Keynote address, Quadrennial Ozone Symposium, Charlottesville, VA, June 4, 1992
- S. Solomon, Ozone Depletion in the Last Place on Earth, Paul C. Daniels Memorial Lecture, Antarctic Society, Washington, DC, September 22, 1992
- S. Solomon, Ozone Depletion at the Ends of the Earth and Points In Between, Distinguished Lecture Series, University of Maryland, College Park, MD, October 8, 1992
- S. Solomon, Ozone Depletion at the Ends of the Earth and Points In Between, Marlar Lecture, Department of Space Physics and Astronomy, Rice University, Houston, TX, November 11, 1992
- S. Solomon, Atmospheric Chemistry and Global Change, Short Course at the University of Oklahoma, Norman, OK, January 6–10, 1993
- S. Solomon, Ozone Depletion, Keynote Speaker at Chemistry Day at the Adler Planetarium in Chicago, sponsored by the American Chemical Society, November 6, 1993
- S. Solomon, Ozone Depletion at the Ends of the Earth and Points in Between, Gamow Memorial Lecture, University of Colorado, Boulder, April 20, 1994
- S. Solomon, The Interface Between Ozone Science and Policy, Global Change Forum, George Washington University, Washington, DC, May 1994
- S. Solomon, Ozone Depletion, Plenary Lecture at the American Society for Mass Spectrometry Meeting in Chicago, IL, May 30, 1994

S. Solomon, Ozone Depletion, Marple-Schweitzer Lecture in the Department of Chemistry, Northwestern University, Evanston, IL, May 31, 1994

S. Solomon, Global Changes: Ozone Depletion, Lindsey Lecture at the NASA Goddard Space Flight Center, June 7, 1994

S. Solomon, Global Changes: An Update on Ozone Depletion, Invited lecture at the American Chemical Society meeting in Washington, DC, August 24, 1994

S. Solomon, Ozone Depletion at the Ends of the Earth and Points in Between, Frontiers of Science Lecture Series, University of Utah, Salt Lake City, February 22, 1995

S. Solomon, Invited plenary speaker at IUGG Symposium, Boulder, CO, July 1995

S. Solomon, Stratospheric Chemistry and Ozone Depletion, NATO Advanced Study Institute, Val Morin, Quebec, Canada, September 1995

S. Solomon, Jean Day Memorial Lecture, Rutgers University, November 1995

S. Solomon, Frank T. Gucker Memorial Lecture, University of Indiana, February 1996

S. Solomon, Keynote Speaker, Women's History Month, National Science Foundation, Arlington, VA, March 1996

S. Solomon, Jennifer Mills Memorial Lecture, Kalamazoo College, Kalamazoo, MI, July 1996

S. Solomon, Plenary Lecture, American Association for Aerosol Research, Orlando, FL, October 1996

S. Solomon, Randolph T. Major Symposium Speaker, University of Connecticut, Storrs, CT, March 1997

S. Solomon, E. Lee Memorial Lecture, University of California, Irvine, CA, May 1997

S. Solomon, Plenary Speaker, International Association for Geophysics and Aeronomy (IAGA), Upsalla, Sweden, August 1997

S. Solomon, G. N. Lewis Lecturer, University of California, Berkeley CA, February 1998

S. Solomon, J. B. Priestley Lecturer, Commonwealth Scientific and Industrial Research Organization (CSIRO), Melbourne, Australia, September 1998

S. Solomon, Zucker Fellow, Yale University, October 1999

S. Solomon, Thompson Lecturer, Advanced Study Program, NCAR, January 2000

S. Solomon, NSF-Geo Distinguished Lecturer, March 6, 2000

S. Solomon, Chesley Lecturer, Carleton College, Northfield, MN, April 2000

S. Solomon, Byrne Lecturer, Oregon State University, Corvallis, OR, February 2001

S. Solomon, Director's Lecture Series, Lawrence Livermore National Laboratory, May 31, 2001

S. Solomon, Meteorology Day Lecture, Bureau of Meteorology, Melbourne, Australia, March 2002

S. Solomon, Weizmann Memorial Lecture, Weizmann Institute, Rehovot, Israel, December 2002

S. Solomon, A Chemist Looks at Climate Change, Mickel Lecture, Chemistry Department, University of Colorado, Boulder, March 2003

S. Solomon, Ozone Depletion and Climate Change, International Science Symposium, Beijing, China, April 2003

S. Solomon, The IPCC Special Report on HFCs, Earth Technology Forum, Washington, DC, April 2003

S. Solomon, Climate Change: A Review of the Issue, University of Miami, Miami, FL, May 2003

S. Solomon, The IPCC 2007 Assessment, Climate System Model Workshop, Breckenridge, CO, June 2003

S. Solomon, The IPCC 2007 Assessment, Gordon Research Conference, Colby College, NH, July 2003

S. Solomon, Climate Change: A Review of the Issue, University of East Anglia, Norwich, UK, September 2003

S. Solomon, IPCC 2007: Progress and Plans, CLIVAR Conference, Baltimore, MD, June 2004

- S. Solomon, Climate Change, City of Boulder Public Library, August 2004
- S. Solomon, Ozone Depletion and Climate Change: A Tale of Two Environmental Issues, Trustee's Council of Penn Women, University of Pennsylvania, Philadelphia, PA, February 2005
- S. Solomon, Lewis and Clark: Pioneering Meteorological Observers in the American West, Academy of Natural Sciences, Philadelphia, PA, February 2005
- S. Solomon, IPCC (2005) Special Report: *Safeguarding the Ozone Layer and the Global Climate System*, to the Subsidiary Body on Scientific and Technical Advice (SBSTA), United Nations Framework Convention on Climate Change, May, 2005 and to the Open Ended Working Group of the Montreal Protocol, June, 2005
- S. Solomon, IPCC 2007: Progress and Plans, GEWEX Conference, Orange County, CA, June 2005
- S. Solomon, Atmospheric Chemistry and Scientific Assessment: Where We Have Been, Where We Are, and Where We May Be Going, Gordon Conference on Atmospheric Chemistry, Big Sky, MT, September 2005
- S. Solomon, Ozone Depletion: What's New and How Can It Link to Climate?, Gal-Chen Lecture, Norman, OK, March 2006
- S. Solomon, Keynote Speaker, Antarctic Peninsula Climate Variability Meeting, Boulder, CO, May 2006
- S. Solomon, My Life in Science, commencement speaker at Illinois Math and Science Academy Graduation, June 2006
- S. Solomon, Ozone and Volcanoes: A Review, lecture given in association with receipt of the Goldschmidt Prize of the Geochemical Society, Melbourne, Australia, August 2006
- S. Solomon, Climate Change: A Review for Everyone, Juday Lecturer, University of Montana, November 2006
- S. Solomon, Anthropogenic Climate Change, Wright Colloquium, University of Geneva, November 2006
- S. Solomon, Climate Change (2007): The IPCC Assessment, French Academy of Sciences, Paris, February 6, 2007

- S. Solomon, Testimony to the United States House of Representatives and the United States Senate on the IPCC (2007) Working Group One Scientific Assessment, February 8, 2007
- S. Solomon, Climate Change (2007): The IPCC Assessment, Plenary Lecture, AAAS, San Francisco, February 19, 2007
- S. Solomon, Climate Change (2007): The IPCC Assessment, Royal Society, London, March 1, 2007
- S. Solomon, Climate Change (2007): The IPCC Assessment, Director's Distinguished lecture, LLNL, March 2007
- S. Solomon, Climate Change and Ozone Depletion: A Tale of Two Environmental Issues, National Science Teachers' Association, St. Louis, April 1, 2007
- S. Solomon, Climate Change (2007): The IPCC Assessment, The Norwegian Academy, Oslo, April 2007
- S. Solomon, Roundtable on Climate Change, United Nations Business Council for Sustainable Development, New York, May 2007
- S. Solomon, A Review of Ozone Depletion and Its Links to Climate Change, New Zealand Antarctic Programme 50th Anniversary Conference, Wellington, NZ, July 2007
- S. Solomon, Review of Coupling Between Climate and Chemistry, NATO summer school for students and young scientists, Oleron, France, September 2007
- S. Solomon, A Review of Stratospheric Ozone Depletion, and Some Linkages and Parallels to Climate Change, Bjerknes Lecture, American Geophysical Union, December 2007
- S. Solomon, Linnett Lecturer, University of Cambridge, UK, February 2008
- S. Solomon, Bolin Lecturer, Stockholm University, Stockholm, Sweden, May 2008
- S. Solomon, Keynote Lecture, Stratospheric Processes and their Role in Climate (SPARC) Symposium, August 2008
- S. Solomon, Climate Change, AAAS presentation conference for congressional staff, January 2009

S. Solomon, Certainty and Uncertainty in Climate Change: Framing a Basis for Decisions, National Academy of Sciences Climate Summit, April 2009

S. Solomon, Irreversible Climate Change, Keynote Speech, IAMAS, Montreal, July 2009

S. Solomon, Byrne Lecturer, Oregon State University, October 2009

S. Solomon, Keynote Speaker, Sustainability Conference, Baldwin-Wallace College, February 2010

S. Solomon, Keynote Speech, Climate Change for Teachers, Astron. Soc. of the Pacific, August 2010

S. Solomon, Darsh Wasan Lecturer, Illinois Institute of Technology, Chicago, October 2010

S. Solomon, Climate Change, Dean's Distinguished Lecture, Rutgers University, February 2011

S. Solomon, The Stratosphere and Climate Change, Reading University, UK, March 2011

S. Solomon, Keeling Lecture, University of Illinois at Urbana-Champaign, September, 2011

S. Solomon, Houghton Lecture, Massachusetts Institute of Technology, September, 2011

S. Solomon, Honors College Boise State University Distinguished Lecturer, Boise, March, 2012

S. Solomon, Robbins lecturer, Pomona College, February, 2013

S. Solomon, Helen Murray Free lecturer, Wooster College, Wooster, OH, October, 2013

S. Solomon, Johnston Lecture, Department of Chemistry, Berkeley, CA, February, 2014

S. Solomon, Chancellor's Distinguished Lecturer, U. Colorado, Denver, September, 2014

S. Solomon, Wigner Lecturer, Oak Ridge National Laboratory, Oak Ridge, TN, December, 2014

- S. Solomon, Invited speaker, Conference on volcanoes and climate, Bern, Switzerland, April, 2015.
- S. Solomon, Sears lecturer, Woods Hole Institute of Oceanography, June, 2015.
- S. Solomon, Keynote speaker, SPARC Upper Troposphere/Lower Stratosphere meeting, Boulder, CO July, 2015.
- S. Solomon, Kaufmann Lecturer, Univ. of Pittsburgh, October, 2015.
- S. Solomon, Chemistry Department Distinguished Lecturer, Roger Williams University, Bristol, RI October 2015.
- S. Solomon, Invited speaker, special session on observing the next volcanic eruption, AGU, San Francisco, December, 2015.
- S. Solomon, Quantitative Theory and Methods seminar at Emory University, February 2016.
- S. Solomon, Morley Lecturer, Reading University, May 2016.
- S. Solomon, Ellen Swallow Richards Lecturer, City of Lawrence, MA, September, 2016.
- S. Solomon, Carlson Lecturer, New England Aquarium and Lorenz Center, MIT, October, 2017.
- S. Solomon, multiple lectures onboard Island Sky, MIT alumni cruise, Falkland Islands-South Georgia-Antarctic Peninsula, January 2018.
- S. Solomon, Day Prize lecturer, Bowdoin College, April, 2018.
- S. Solomon, Day Prize lecturer, Smith College, April, 2018.
- S. Solomon, Crafoord Prize lecture, Swedish Academy of Sciences, May, 2018.
- S. Solomon, Day Prize lecturer, Bryn Mawr College, October, 2018.
- S. Solomon, invited lectures at BOKU, Vienna, Austria and Stockholm, Sweden, March, 2019.
- S. Solomon, Fleagle lecturer, University of Washington, April, 2019.
- S. Solomon, First Inaugural John Houghton memorial lecturer, November, 2020.
- S. Solomon, Killian lecture, MIT, April, 2021.

S. Solomon, Yanai lecturer, UCLA, May, 2021.