

Paul Withers

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Citizenship: British (Green Card holder)

Education

- PhD, Planetary Science, University of Arizona 2003
- MS, Physics, Cambridge University, Great Britain 1998
- BA, Physics, Cambridge University, Great Britain 1998

Professional Experience

- Assistant Professor, Astronomy Department, Boston Univ. 2010-present
Analysis of atmosphere and ionospheric data from Venus, Earth and Mars, plus involvement with accelerometer and radio science spaceflight instruments
- Senior research associate, Boston Univ. Dr. Michael Mendillo 2007 – 2010
- Research associate, Boston Univ. Dr. Michael Mendillo 2003 – 2007
Analysis of ionospheric data from Venus, Earth and Mars, plus numerical modelling
- Graduate research assistant, Univ. of Arizona Dr. Stephen Bougher 1998 – 2003
Studies of tides in the martian upper atmosphere, plus an advisory role in mission operations for Mars Global Surveyor and Mars Odyssey aerobraking

Selected Fellowships, Honors, and Awards

- NASA Early Career Fellowship 2009
- CEDAR Postdoctoral Fellowship from NSF for upper atmospheric research 2003
- Kuiper Memorial Award from the University of Arizona for excellence 2002
in academic work and research in planetary science

Selected Invited Presentations

- The unusual electrodynamics of Mars, European Planetary Science Congress, Rome, Italy 2010
- Results from the Phoenix Atmospheric Structure Experiment, 7th International Planetary Probe Workshop, Barcelona, Spain 2010
- Exploring planetary ionospheres, Center for Atmospheric Research, University of Massachusetts - Lowell 2009
- The effects of solar flares on planetary ionospheres, AOGS meeting, Singapore 2009

Selected Spacecraft Mission Involvement

- MAVEN Critical Data Products provider
- Venus Express Accelerometer Instrument (Co-I)
- Venus Express Radio Science Instrument (Co-I)
- Mars Express Radio Science Instrument (Co-I)
- Mars Science Laboratory “Atmospheric Council” for EDL Planning

Selected Peer Reviewed Publications

- **Withers** (2011) Attenuation of radio signals by the ionosphere of Mars: Theoretical development and application to MARSIS observations, *Radio Science*, doi:10.1029/2010RS004450, in press
- **Withers** and Catling (2010) Observations of atmospheric tides at the season and latitude of the Phoenix atmospheric entry, *Geophysical Research Letters*, 37, L24204, doi:10.1029/2010GL045382
- **Withers** (2010) Trajectory and atmospheric structure from entry probes: Demonstration of a real-time reconstruction technique using a simple direct-to-Earth radio link, *Planetary and Space Science*, 58, 2044-2049
- **Withers** (2010) Prediction of uncertainties in atmospheric properties measured by radio occultation experiments, *Advances in Space Research*, 46, 58-73
- **Withers** (2009) A review of observed variability in the dayside ionosphere of Mars, *Advances in Space Research*, 44, 277-307
- Paetzold, Tellmann, Haeusler, Bird, Tyler, Christou and **Withers** (2009) A sporadic layer in the Venus lower ionosphere of meteoric origin, *Geophysical Research Letters*, 36, L05203, doi:10.1029/2008GL035875
- **Withers** (2008) Theoretical models of ionospheric electrodynamics and plasma transport, *Journal of Geophysical Research*, 113, A07301, doi:10.1029/2007JA012918
- Mendillo, **Withers**, Hinson, Rishbeth, and Reinisch (2006) Effects of solar flares on the ionosphere of Mars, *Science*, 311, 1135-1138
- Bougher, Bell, Murphy, Lopez-Valverde, and **Withers** (2006) Polar warming in the Mars thermosphere: Seasonal variations owing to changing insolation and dust distributions, *Geophysical Research Letters*, 33, L02203, doi:10.1029/2005GL024059
- Fulchignoni and 42 colleagues, including **Withers** (2005) In situ measurements of the physical characteristics of Titan's environment, *Nature*, 438, 785-791, doi:10.1038/nature04314
- **Withers**, Bougher, and Keating (2003) The effects of topographically-controlled thermal tides in the martian upper atmosphere as seen by the MGS Accelerometer, *Icarus*, 164, 14-32
- **Withers** and Neumann (2001) Enigmatic northern plains of Mars, *Nature*, 410, 651
- Lorenz, Lunine, **Withers**, and McKay (2001) Titan, Mars and Earth: Entropy production by latitudinal heat transport, *Geophysical Research Letters*, 28, 415 – 418