

Dr. Reka Moldovan Winslow

reka.winslow@unh.edu
Space Science Center
Institute for the Study of Earth, Oceans, and Space
University of New Hampshire
8 College Road
Durham, N.H.
03824, USA

Education

- B.Sc. Honours Physics and Astronomy (University of British Columbia [UBC]) (2004 – 2009)
 - Thesis: Frequency analysis of the β Cephei pulsating star δ Ceti from MOST space-based photometry
 - Thesis Advisor: Dr. Jaymie Matthews
- Ph.D. Geophysics, specialized in Planetary Science / Space Physics (UBC) (2009 – 2014)
 - Thesis: Investigation of Mercury's magnetospheric and surface magnetic fields
 - Thesis Advisor: Dr. Catherine L. Johnson

Research Experience

- Postdoctoral Research Scholar in space physics, heliophysics, and planetary science - Space Science Center, University of New Hampshire (2014 – present)
- Research Assistant in planetary science and space plasma physics for the MESSENGER Mission to Mercury: Atmosphere and Magnetosphere Discipline Group (Advisor: Dr. Catherine L. Johnson), UBC (2009 – 2014)
- Research Assistant in stellar asteroseismology for the MOST Space Telescope Mission, Dr. Jaymie Matthews, UBC (2008 – 2009)
- Research Assistant in extrasolar planetary dynamics, MOST Space Telescope Mission, Dr. Brett Gladman and Dr. Jaymie Matthews, UBC (2007 – 2009)
- Research Assistant in experimental particle physics, data analysis, documentation, and system maintenance for the Ion Source Injection System Group, Roman Ruedg, TRIUMF (2006)
- Research Assistant in experimental particle physics, data analysis for the Muon Spin Resonance Group, Dr. Jess Brewer, TRIUMF (2004)

Teaching Experience

Teaching Assistant for the following courses at UBC:

- EOS 310 (The Earth and the Solar System) (2011 – 2013)
- EOS 453 (Physics of the Earth and Other Planets) (2011)
- EOS 355 (The Planets) (2010)
- EOS 250 (Fields and Fluxes) (2009)
- EOS 114 (The Catastrophic Earth: Natural Disasters) (2009 – 2010)

Temporary substitute instructor for the course EOS 110 (The Solid Earth: A Dynamic Planet) in November 2012. I taught classes on magnetism and Earth's magnetic field.

Awards and Scholarships

- Natural Sciences and Engineering Research Council (NSERC) of Canada - Postgraduate Doctoral Scholarship (2012 – 2014)
- UBC Four Year Fellowship Award (2011 – 2014)

- Canadian Space Agency - Space Awareness Grant (2010)
- UBC Faculty of Science Graduate Award (2009 – 2011)
- NSERC - Alexander Graham Bell Canada Graduate Scholarship (2010 – 2011)
- MacKay Memorial Scholarship (2009 – 2010) - outstanding geophysics graduate student
- Colin D. Spence Memorial Scholarship (2009 – 2010) - outstanding geophysics graduate student
- Egil H. Lorntzen Scholarship (2009 – 2010) - outstanding geophysics graduate student
- NSERC - Undergraduate Student Research Award (2009)
- UBC Dean of Science Research Scholarship (2008 – 2009)
- UBC Chancellor's Major Entrance Scholar (2004 – 2005)
- Canada Millennium Foundation Award (2004 – 2005)
- UBC Undergraduate Scholar Program (2004 – 2005)
- TRIUMF High School Fellowship (2004)
- British Columbia Government Scholarship (2004)
- Central Okanagan Scholarship (2004)

Peer-Reviewed Publications

1. **Winslow, R. M.**, N. Lugaz, L. C. Philpott, N. A. Schwadron, C. J. Farrugia, B. J. Anderson, and C. W. Smith (2015), Interplanetary coronal mass ejections from MESSENGER orbital observations at Mercury, *Journal of Geophysical Research: Space Physics*, 120, 6101-6118.
2. Dewey, R. M., D. N. Baker, B. J. Anderson, M. Benna, C. L. Johnson, H. Korth, D. J. Gershman, G. C. Ho, W. E. McClintock, D. Odstrcil, L. C. Philpott, J. M. Raines, D. Schriver, J. A. Slavin, S. C. Solomon, **R. M. Winslow**, and T. H. Zurbuchen (2015), Improving solar wind modeling at Mercury: Incorporating transient solar phenomena into the WSA-ENLIL model with the Cone extension, *Journal of Geophysical Research: Space Physics*, 120, 5667-5685.
3. Lawrence, D. J., B. J. Anderson, D. N. Baker, W. C. Feldman, G. C. Ho, H. Korth, R. L. McNutt Jr., P. N. Peplowski, S. C. Solomon, R. D. Starr, J. D. Vandegriff, **R. M. Winslow** (2015), Comprehensive survey of energetic electron events in Mercury's magnetosphere with data from the MESSENGER Gamma-Ray and Neutron Spectrometer, *Journal of Geophysical Research: Space Physics*, 120, 2851-2876.
4. Anderson, B. J., C. L. Johnson, H. Korth, J. A. Slavin, **R. M. Winslow**, R. J. Phillips, R. L. McNutt Jr., and S. C. Solomon (2014), Steady-state field-aligned currents at Mercury, *Geophysical Research Letters*, 41, 7444-7452.
5. Philpott, L. C., C. L. Johnson, **R. M. Winslow**, B. J. Anderson, H. Korth, M. E. Purucker, S. C. Solomon (2014), Constraints on the secular variation of Mercury's magnetic field from the combined analysis of MESSENGER and Mariner 10 data, *Geophysical Research Letters*, 41, 6627-6634.
6. Slavin, J. A., G. A. DiBraccio, D. J. Gershman, S. M. Imber, G. K. Poh, J. M. Raines, T. H. Zurbuchen, X. Jia, D. N. Baker, K.-H. Glassmeier, S. A. Livi, S. A. Boardsen, T. A. Cassidy, M. Sarantos, T. Sundberg, A. Masters, C. L. Johnson, **R. M. Winslow**, B. J. Anderson, H. Korth, R. L. McNutt Jr., and S. C. Solomon (2014), MESSENGER observations of Mercury's dayside magnetosphere under extreme solar wind conditions, *Journal of Geophysical Research: Space Physics*, 119, 8087-8116.
7. **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, D. J. Gershman, J. M. Raines, R. J. Lillis, H. Korth, J. A. Slavin, S. C. Solomon, T. H. Zurbuchen, and M. T. Zuber (2014), Mercury's surface magnetic field determined from proton reflection magnetometry, *Geophysical Research Letters*, 41, 4463-4470.

8. Domingue, D. L., C. R. Chapman, R. M. Killen, T. H. Zurbuchen, J. A. Gilbert, M. Sarantos, M. Benna, J. A. Slavin, D. Schriver, P. M. Travnicek, T. M. Orlando, A. L. Sprague, D. T. Blewett, J. J. Gillis-Davis, W. C. Feldman, D. J. Lawrence, G. C. Ho, D. S. Ebel, F. Vilas, C. M. Pieters, S. C. Solomon, C. L. Johnson, **R. M. Winslow**, W. E. McClintock, J. Helbert (2014), Mercury's weather-beaten surface: Understanding Mercury in the context of lunar and asteroidal space weathering studies, *Space Science Reviews*, 181, 121-214.
9. Masters, A., J. A. Slavin, G. A. DiBraccio, T. Sundberg, **R. M. Winslow**, C. L. Johnson, B. J. Anderson, H. Korth (2013), Comparison of magnetic overshoot features at the bow shocks of Mercury and Saturn, *Journal of Geophysical Research: Space Physics*, 118, 4381-4390.
10. **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, Daniel N. Baker, S. C. Solomon (2013), Mercury's magnetopause and bow shock from MESSENGER Magnetometer observations, *Journal of Geophysical Research: Space Physics*, 118, 2213-2227.
11. Baker, D. N., G. Poh, D. Odstrcil, C. N. Arge, M. Benna, C. L. Johnson, H. Korth, D. J. Gershman, G. C. Ho, W. E. McClintock, T. A. Cassidy, A. Merkel, J. M. Raines, D. Schriver, J. A. Slavin, S. C. Solomon, P. M. Travnicek, **R. M. Winslow**, T. H. Zurbuchen (2013), Solar wind forcing at Mercury: WSA-ENLIL model results, *Journal of Geophysical Research: Space Physics*, 118, 1-13.
12. **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, H. Korth, J. A. Slavin, M. E. Purucker, S. C. Solomon (2012), Observations of Mercury's northern cusp region with MESSENGER's Magnetometer, *Geophysical Research Letters*, 39, L08112.
13. Anderson, B. J., C. L. Johnson, H. Korth, **R. M. Winslow**, J. E. Borovsky, M. E. Purucker, J. A. Slavin, S. C. Solomon, M. T. Zuber, R. L. McNutt Jr. (2012), Low-degree structure in Mercury's planetary magnetic field, *Journal of Geophysical Research*, 117, E00L12.
14. Korth, H., B. J. Anderson, C. L. Johnson, **R. M. Winslow**, J. A. Slavin, M. E. Purucker, S. C. Solomon, R. L. McNutt Jr. (2012), Characteristics of the plasma distribution in Mercury's equatorial magnetosphere derived from MESSENGER Magnetometer observations, *Journal of Geophysical Research*, 117, A00M07.
15. Johnson, C. L., M. E. Purucker, H. Korth, B. J. Anderson, **R. M. Winslow**, M. M. H. Al Asad, J. A. Slavin, I. I. Alexeev, R. J. Phillips, M. T. Zuber, S. C. Solomon (2012), MESSENGER observations of Mercury's magnetic field structure, *Journal of Geophysical Research*, 117, E00L14.
16. Slavin, J. A., S. M. Imber, S. A. Boardsen, G. A. DiBraccio, T. Sundberg, M. Sarantos, T. Nieves-Chinchilla, A. Szabo, B. J. Anderson, H. Korth, T. H. Zurbuchen, J. M. Raines, C. L. Johnson, **R. M. Winslow**, R. M. Killen, R. L. McNutt Jr., S. C. Solomon (2012), MESSENGER observations of a flux-transfer-event shower at Mercury, *Journal of Geophysical Research*, 117, A00M06.
17. Ho, G. C., S. M. Krimigis, R. E. Gold, D. N. Baker, B. J. Anderson, H. Korth, J. A. Slavin, R. L. McNutt Jr., **R. M. Winslow**, S. C. Solomon (2012), Spatial distribution and spectral characteristics of energetic electrons in Mercury's magnetosphere, *Journal of Geophysical Research*, 117, A00M04.
18. Anderson, B. J., C. L. Johnson, H. Korth, M. E. Purucker, **R. M. Winslow**, J. A. Slavin, S. C. Solomon, R. L. McNutt Jr., J. M. Raines, T. H. Zurbuchen (2011), The global magnetic field of Mercury from MESSENGER orbital observations, *Science*, 333, 1859-1862.
19. Korth, H., B. J. Anderson, J. M. Raines, J. A. Slavin, T. H. Zurbuchen, C. L. Johnson, M. E. Purucker, **R. M. Winslow**, S. C. Solomon, R. L. McNutt Jr. (2011), Plasma pressure in Mercury's equatorial magnetosphere derived from MESSENGER Magnetometer observations, *Geophysical Research Letters*, 38, L22201.
20. **Moldovan, R.**, J.M. Matthews, B. Gladman, W. F. Bottke, D. Vokrouhlicky (2010), Searching for trojan asteroids in the HD 209458 system: Space-based MOST photometry and dynamical modeling, *The Astrophysical Journal*, 716, 315-323.

Invited Talks

- Seminar talk at the University of New Hampshire, Space Science Seminar Series - March 26th, 2014 - Title: “Investigation of Mercury’s magnetospheric and surface magnetic fields”.
- Invited presentation at Fall AGU (San Francisco) - December 11th, 2013 - Title: “First application of proton reflection magnetometry with MESSENGER to estimate Mercury’s surface magnetic field strength”.
- Seminar talk at the Georgia Institute of Technology, Planetary Seminar Series - November 12th, 2013 - Title: “Investigation of Mercury’s magnetospheric and surface magnetic fields”.
- Colloquium talk at University of Massachusetts, Amherst, Astronomy Colloquium Series - October 31, 2013 - Title: “Investigation of Mercury’s magnetospheric and surface magnetic fields”.
- Seminar talk at Brown University, Astrophysics Seminar Series - October 23rd, 2013 - Title: “Investigation of Mercury’s magnetospheric and surface magnetic fields”.
- Seminar talk at Berkeley Space Sciences Laboratory - July 2nd, 2013 - Title: “Investigation of Mercury’s magnetospheric and surface magnetic fields”.

Conferences and Presentations (All listed below were presented by me)

- **Winslow, R. M.**, A. P. Jordan, J. S. Halekas, T. J. Stubbs, N. A. Schwadron, J. K. Wilson, H. E. Spence (March 2015), Lunar surface charging and possible dielectric breakdown in the regolith during strong SEP events, Lunar and Planetary Science Conference (LPSC) in Houston, Texas - **poster presentation**.
- **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, Daniel N. Baker, S. C. Solomon (December 2014), Regional-scale surface magnetic fields and proton fluxes to Mercury’s surface. American Geophysical Union (AGU) Fall Meeting in San Francisco, California - **poster presentation**.
- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, D. Gershman, J. Raines, R. Lillis, H. Korth, J. A. Slavin, and S. C. Solomon (May 2014), Using proton reflection-magnetometry to estimate regional-scale surface magnetic fields and fluxes at Mercury. 32nd MESSENGER Science Team Meeting in Laurel, Maryland - **oral presentation**.
- **Winslow, R. M.**, N. Schwadron, N. Lugaz, C. W. Smith, C. J. Farrugia, B. J. Anderson (March 2014), ICME evolution from Mercury to 1 AU - possible early detection system for geomagnetic storms. 7th Community Coordinated Modeling Center Workshop in Annapolis, Maryland - **oral presentation**.
- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, D. Gershman, J. Raines, R. Lillis, H. Korth, J. A. Slavin, and S. C. Solomon (December 2013), First application of proton reflection magnetometry with MESSENGER to estimate Mercury’s surface magnetic field strength. American Geophysical Union (AGU) Fall Meeting in San Francisco, California - **oral presentation (invited)**.
- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, D. Gershman, R. Lillis, J. A. Slavin, H. Korth, J. Raines (June 2013), Proton reflectometry, loss cone signatures, and pitch angle diffusion. 29th MESSENGER Science Team Meeting in Cleveland, Ohio - **oral presentation**.
- **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, Daniel N. Baker, S. C. Solomon (December 2012), Mercury’s magnetopause and bow shock from MESSENGER observations. American Geophysical Union (AGU) Fall Meeting in San Francisco, California - **poster presentation**.
- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson (November 2012), Proton reflectometry - characterizing the proton loss cone with FIPS observations. 28th MESSENGER Science Team Meeting in Santa Monica, California - **oral presentation**.

- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, H. Korth, J. A. Slavin, M. E. Purucker, S. C. Solomon (July 2012), Observations of Mercury's northern cusp region with MESSENGER's Magnetometer. Women in Physics Conference in Vancouver, BC, Canada - **oral presentation**.
- **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, Daniel N. Baker, S. C. Solomon (May 2012), Update on Mercury's magnetopause and bow shock observations with MESSENGER. 26th MESSENGER Science Team Meeting in Vancouver, BC, Canada - **oral presentation**.
- **Winslow, R. M.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, Daniel N. Baker, S. C. Solomon (February 2012), Magnetometer observations of Mercury's magnetopause and bow shock. 25th MESSENGER Science Team Meeting in Tempe, Arizona - **oral presentation**.
- **Winslow, R. M.**, C. L. Johnson, B. J. Anderson, H. Korth, J. A. Slavin, M. E. Purucker, S. C. Solomon (December 2011), Observations of Mercury's northern cusp region with MESSENGER's Magnetometer. American Geophysical Union (AGU) Fall Meeting in San Francisco, California - **poster presentation**.
- **Moldovan, R.**, B. J. Anderson, C. L. Johnson, J. A. Slavin, H. Korth, M. E. Purucker, S. C. Solomon (October 2011), Mercury's magnetopause and bow shock from MESSENGER observations. EPSC - DPS Joint Meeting, Nantes, France - **poster presentation**.
- **Moldovan, R.**, C. L. Johnson, J. A. Ritzer, M. E. Purucker, S. C. Solomon, B. J. Anderson, B. W. Denevi, H. Korth (March 2011), Detecting crustal magnetic fields on Mercury with MESSENGER. Lunar and Planetary Science Conference (LPSC) in Houston, Texas - **poster presentation**.
- **Moldovan, R.**, J. M. Matthews, B. Gladman, W. F. Bottke, D. Vokrouhlicky (March 2010), Searching for Trojan Asteroids in the HD 209458 System: Space-based MOST Photometry and Dynamical Modeling. LPSC in Houston, Texas - **oral presentation**.
- **Moldovan, R.**, J.M. Matthews, C. Cameron (June 2009), Frequency analysis of the β Cephei pulsating star δ Ceti from MOST space-based photometry: one period or many? Stellar Pulsation Conference in Santa Fe, New Mexico - **poster presentation**.
- **Moldovan, R.**, J. M. Matthews, B. Gladman, W. F. Bottke, D. Vokrouhlicky (February 2009), Searching for asteroids in the HD 209458 system. First CoRoT International Symposium in Paris, France - **poster presentation**.
- **Moldovan, R.** & J. M. Matthews (May 2008) Searching for asteroids around another star. Canadian Astronomical Society (CASCA) Meeting in Victoria - **poster presentation**.
- **Moldovan, R.** & J. M. Matthews (July 2007) Asteroids in extrasolar systems. Presented at the MOST Science Team Meeting in Vancouver - **oral presentation**.
- **Moldovan, R.** & J. M. Matthews (October 2007) Searching for asteroids around another star. Canadian Undergraduate Physics Conference in Vancouver - **poster presentation**.
- **Moldovan, R.** (August 2006) The ISIS Group at TRIUMF. Annual TRIUMF Summer Student Symposium in Vancouver - **oral presentation**.