

SSERVI DREAM2 Publications list

Davis, S, Marshall, J. Richard, D, Adler, D. Adler, B. (2014). Scattering properties of lunar dust analogs. *Planet. Space Sci.* , 90, 28-36 . **SSERVI-2014-008**

Stubbs, T. J., W. M. Farrell, J. S. Halekas, J. K. Burchill, M. R. Collier , M. I. Zimmerman , R. R. Vondrak , G. T. Delory , and R. F. Pfaff (2014), Dependence of lunar surface charging on solar wind plasma conditions and solar radiation, *Planet. Space Sci.*, 90, 10-27, **SSERVI-2014-009**

Zimmerman, M. I., W. M. Farrell, and A. R. Poppe (2014), Grid-free plasma simulations of the complex interactions between the solar wind and small, near-Earth asteroids, *Icarus*, 238, 77-85. **SSERVI-2013-030**

Lipatov, A. S., J. F. Cooper, E. C. Sittler Jr., and R. E Hartle (2013), The light (H+, H2+, He+) and heavy (Na+) pickup ion dynamics in the lunar plasma environment: 3D hybrid kinetic modeling, *Adv. Sp. Res. (Advances in Space Research)* , 52, 1929-1938. **SSERVI-2013-031**

Poppe, A.R., J.S. Halekas, M. Sarantos, and G.T. Delory (2013), The self-sputtered contribution to the lunar exosphere, *J. Geophys. Res.: Planets*, 118, 1934-1944, DOI: 10.1002/jgre.20148 **SSERVI-2013-032**

Feldman, P. D., D. A. Glenar, T. J. Stubbs, K. D. Rutherford, P. F. Miles, T. K. Greathouse, D. E. Kaufmann, J. W. Parker, and S. A. Stern (2014) , Upper limits for a lunar dust exosphere from far-ultraviolet spectroscopy by LRO/LAMP, *Icarus*, 233, 106-113. **SSERVI-2013-033**

Farrell, W. M., D. M. Hurley, R. R. Hodges, R. M. Killen, J. S. Halekas, M. I. Zimmerman, and G. T. Delory (2013), Redistribution of lunar polar water to mid-latitudes and its role in forming an OH veneer, *Planet. Space Sci.* , 89, 15, **SSERVI-2013-029**

Walker, J. J., M. E. Koepke, M. I. Zimmerman, W. M. Farrell, and V. I. Demidov (2013), Analytical model for gyro-phase drift arising from abrupt inhomogeneity, *J. Plasma Phys.*, published online 13 Dec 2013, DOI: <http://dx.doi.org/10.1017/S0022377813001359> **SSERVI-2013-034/student**

Chi, P. J., C. T. Russell, H. Y. Wei, and W. M. Farrell (2013), Observations of Narrowband Ion Cyclotron Waves on the Surface of the Moon in the Terrestrial Magnetotail, *Planetary Space Sci.*, 89, 21-28. **SSERVI-2013-035**

Farrell, W. M., D. M. Hurley, and M. I. Zimmerman (2015), Solar wind implantation into lunar regolith: Hydrogen retention in a surface with defects, *Icarus*, 255, 116-126. **SSERVI-2014-010**

Spence, H. E., M. J. Golightly, C. J. Joyce, M. D. Looper, N. A. Schwadron, S. S. Smith, L. W. Townsend, J. Wilson, and C. Zeitlin (2013), "Relative contributions of galactic cosmic rays and lunar proton "albedo" to dose and dose rates near the Moon", *Space Weather*, 11, 643–650, DOI: 10.1002/2013SW000995. **SSERVI-2013-036**

Joyce, C. J., N. A. Schwadron, J. K. Wilson, H. E. Spence, J. C. Kasper, M. Golightly, J. B. Blake, J. Mazur, L. W. Townsend, A. W. Case, E. Semones, S. Smith and C. J. Zeitlin (2013), "Validation of PREDICCS using LRO/CRaTER observations during three major solar events in 2012", *Space Weather*, 11, 350–360, DOI: 10.1002/swe.20059 **SSERVI-2013-037/Student**

Joyce, C. J., N. A. Schwadron, J. K. Wilson, H. E. Spence, J. C. Kasper, M. Golightly, J. B. Blake, L. W. Townsend, A. W. Case, E. Semones, S. Smith and C. J. Zeitlin (2014), "Radiation modeling in the Earth and Mars atmospheres using LRO/CRaTER with the EMMREM Module", *Space Weather*, DOI: 10.1002/2013SW000997 **SSERVI-2014-499/Student**

Collier, M. C., et al. (2014), On lunar exospheric column densities and solar wind access beyond the terminator from ROSAT soft x-ray observations of solar wind charge exchange, *J. Geophys. Res., J. Geophys. Res.*, 119, 1459-1479 **SSERVI-2014-098**

Poppe, A. R., S. Fatemi, J. S. Halekas, M. Holmstrom, and G. T. Delory (2014), ARTEMIS observations of extreme diamagnetic fields in the lunar wake, *Geophys. Res. Lett.*, 41, 3766-3773. **SSERVI-2014-093/Student**

Jordan, A. P., T. J. Stubbs, J. K. Wilson, N. A. Schwadron, H. E. Spence, and C. J. Joyce (2014), Deep dielectric charging of regolith within the Moon's permanently shadowed regions, *J. Geophys. Res.*, 119, 1806-1821, DOI: 10.1002/2014JE004648. **SSERVI-2014-095**

Halekas, J. S. et al. (2014), The effects of solar wind velocity distributions on the refilling of the lunar wake: ARTEMIS observations and comparisons to one-dimensional theory, *J. Geophys. Res.*, 119, 5133-5149. **SSERVI-2014-096**

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Hijazi, H., M. E. Bannister, H. M. Meyer III, C. M. Rouleau, A. F. Barghouty, D. L. Rickman, and F. W. Meyer (2014), Anorthite sputtering by H^+ and Ar^{q+} ($q=1-9$) at solar wind velocities, *J. Geophys. Res.: Space Physics*, 119, 8006-8016, doi:10.1002/2014JA020140. **SSERVI-2014-100**

Jackson, T. L., W. M. Farrell, M. I. Zimmerman (2015), Rover wheel charging within a lunar crater, *Adv. Space Res.* 55, 1710-1720, **SSERVI-2014-168**

Poppe, A. R., and S. M. Curry, Martian planetary heavy ion sputtering of Phobos, *Geophys. Res. Lett.*, 41, 6335-6341, **SSERVI-2014-171/postdoc**

Glenar, D. A., T. J. Stubbs, J. M. Hahn, and Y. Wang (2014), Search for a high altitude lunar dust exosphere using Clementine navigational star tracker measurements, *J. Geophys. Res.*, published online, 10.1002/2014JE004702, **SSERVI-2014-173**

Jordan, A. P., T. J. Stubbs, J. K. Wilson, N. A. Schwadron, and H. E. Spence (2015), Dielectric breakdown weathering of the Moon's polar regolith, *J. Geophys. Res. Planets*, 120, 210-225, DOI: 10.1002/2014JE004710, **SSERVI-2014-177**

Fatemi, S., M. Holmström, Y. Futaana, C. Lue, M. R. Collier, S. Barabash, and G. Stenberg (2014), Effects of protons reflected by lunar crustal magnetic fields on the global lunar plasma environment, *J. Geophys. Res. Space Physics*, 119, doi:10.1002/2014JA019900. **SSERVI-2014-500/Student**

Schwadron, N. A., S. Smith and H. E. Spence (2013), The CRaTER Special Issue of Space Weather: Building the observational foundation to deduce biological effects of space radiation, *Space Weather*, 11, 47, doi:10.1002/20026. **SSERVI-2014-221**

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Poppe, A. R., M. I. Zimmerman, J. S. Halekas, and W. M. Farrell (2015), The electrostatic plasma environment of a small airless body under non-aligned plasma flow and UV conditions, *Planetary Space Sci.*, 119, 111-120, **SSERVI-2014-274**

Fatemi, Shahab, Charles Lue, Mats Holmstrom, Andrew R. Poppe, Martin Wieser, Stas Barabash, and Gregory T. Delory (2015), Solar wind plasma interaction with Gerasimovich lunar magnetic anomaly, *J. Geophys. Res.*, 120, 4719-4735 . **SSERVI-2015-026**

Lipatov, A. S., W. M. Farrell, J. F. Cooper, E. C. Sittler, and R. E. Hartle (2015), 3-D hybrid kinetic modeling of the interaction between the solar wind and lunar-like exospheric pickup ions in the case of oblique/quasi-parallel/parallel upstream magnetic field, *Planet. Space Sci.*, submitted but not published, **SSERVI-2015-041**

Farrell, W. M., D. M. Hurley, and M. I. Zimmerman (2015), Spillage of lunar polar crater volatiles onto adjacent terrains: The case for dynamic processes, *Geophys. Res. Lett.*, 42, 3160-3165, **SSERVI-2015-042**

Zimmerman, M. I., W. M. Farrell, A. R. Poppe (2015), Kinetic Simulations of Micro-Magnetosphere Formation on the Moon, *J. Geophys Res.*, 120, 1893-1903, **SSERVI-2015-159**

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Poppe, A. R., S. Fatemi, I. Garrick-Bethell, D. Hemingway, and M. Holmstrom (2016), Solar wind interaction with the Reiner Gamma crustal magnetic anomaly: Connecting source magnetization to surface weathering, *Icarus*, 266, 261-266, **SSERVI-2015-160**

Halekas, J. S. ,M. Benna, P. R. Mahaffy, R. C. Elphic, A. R. Poppe, and G. T. Delory (2015), Detection of lunar exospheric ions by the LADEE Neutral Mass Spectrometer, *Geophys. Research Lett.*, 42, 5162-5169 **SSERVI-2015-185**

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Schwadron, N. A., Wilson, J. K., Looper, M. D., Jordan, A. P., Spence, H. E., Blake, J. B., Case, A. W., Iwata, Y., Kasper, J. C., Farrell, W. M., Lawrence, D. J., Livadiotis, G., Mazur, J., Petro, N., Pieters, C., Robinson, M. S., Smith, S., Townsend, L. W., and Zeitlin, C. (2016), Signatures of volatiles in the lunar proton albedo, *Icarus*, 273, 25. **SSERVI-2015-187**.

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Poppe, A. R., S. M. Curry, and S. Fatemi (2016), The Phobos neutral and ionized torus, *J. Geophys. Res. Planets*, 121, DOI: 10.1002/2105JE004948. **SSERVI-2016-003**.

Collier, M. R., R. R. Vondrak, R. P. Hoyt, M. A. Mesarch, W. M. Farrell, J. W. Keller, P. E. Clark, N. E. Petro, and K.-J. Hwang (2016), Tethered lunar subsatellites for multi-point and low altitude measurements, *Acta Astronautica.*, 128, 464-472 **SSERVI-2016-004**.

Farrell, W. M., D. H. Hurley, M. J. Poston, M. I. Zimmerman, T. M. Orlando, C. A. Hibbitts, and R. M. Killen (2016), The Gas-Surface Interaction of a Human-Occupied Spacecraft with a Near Earth Object, *Adv. Space Res.*, 58, 1648-1653. **SSERVI-2016-037**.

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Hodges, R. R. (2016), Methane in the lunar exosphere: Implications for solar wind carbon escape, *Geophys. Res. Lett.*, 43, doi:10.1002/2016GL068994., **SSERVI-2016-094**

Halekas, J. S., A. R. Poppe, W. M. Farrell, and J. P. McFadden (2016), Structure and composition of the distant lunar exosphere: Constraints from ARTEMIS observations of ion acceleration in time-varying fields, *J. Geophys. Res. –Planets*, 121, 1102-1115. **SSERVI-2016-095**.

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Collier, M. R., A. Newheart, A. R. Poppe, H. K. Hills, W. M. Farrell (2016), Stairstep particle flux spectra on the lunar surface: Evidence for nonmonotonic potentials, , *Geophys. Res. Lett.*, 44, 79-87, doi:10.1002/2016GL071457 **SSERVI-2016-156**.

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Hurley, D. M., Y. Pendleton, and A. Deutsch (2017), Getting water from a Moon rock: SSERVI lunar water workshop, *Eos*, 98, <https://doi.org/10.1029/2017EO077313> **SSERVI-2017-001**

Halekas, J. S., A. R. Poppe, M. C. Lue, W. M. Farrell and J. P. McFadden (2017), Distribution and solar wind control of compressional solar wind-magnetic anomaly interactions observed at the Moon by ARTEMIS, *J. Geophys. Res. Space Physics*, in press, **SSERVI-2017-004**

Farrell, W. M., J. S. Halekas, S. Fatemi, A. R. Poppe, C. Hartzell, J. R. Marshall, T. J. Stubbs, M. I. Zimmerman, and Y. Zheng (2017), Anticipated electrical environment at Phobos: Nominal and Solar Storm Conditions, *Adv. Space Res.*, in press, **SSERVI-2017-005**

Schwadron,, N. A. J. K. Wilson, M. D. Looper, A. Jordan, M. D. Looper, C. Zeitlin, L. W. Townsend, H. E. Spence, J. Legere, P. Bloser, W. M. Farrell, D. Hurley, N. Petro, T. J. Stubbs, C. Pieters (2017), Using Proton Radiation from the Moon to Search for Diurnal Variation of Regolith Hydrogenation, *Planetary and Space Science*, 212, 1069, **SSERVI-2017-002**

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