

Publications

1. Anderson, B. J., L. J. Zanetti, D. H. Lohr, J. R. Hayes, M. H. Acuña, C. T. Russell, and T. Mulligan, In-flight calibration of the NEAR magnetometer, *IEEE Trans. Geosci. and Remote Sensing*, 39, 907-917, 2001.
2. Bieber, J. W.; Clem, J.; Evenson, P.; Pyle, R.; Blake, J. B.; Mulligan, T.; Ruffolo, D.; Sáiz, A., Observation of Neutron and Gamma Ray Emission from the October 28, 2003 Solar Flare, *Proceedings of the 29th International Cosmic Ray Conference*, Ed. B. Sripathi Acharya, Sunil Gupta, P. Jagadeesan, Atul Jain, S. Karthikeyan, Samuel Morris, and Suresh Tonwar, Mumbai: Tata Institute of Fundamental Research, Vol 1, p.57. 2005.
3. Blake, J. B., T. Mulligan, and J. E. Mazur. "Observations of energetic particles: 13–16 December 2006." In *SEE 2007 International Symposium: Fundamental Science & Applied Aspects. Greece*, pp. 25-26. 2007.
4. GOES-13 SXI Corrective Action Review (SCAR) Summary Report, edited by T. Mulligan, D. Glackin, and E. Amatucci, prepared for *GSFC NASA and NOAA GOES-N/OP Program Office*, 2007.
5. Hecht, J. H., T. Mulligan, J. T. Correia, J. H. Clemmons, D. J. Strickland, R. L. Walterscheid, and M. G. Conde (2012), A multiyear (2002–2006) climatology of O/N₂ in the lower thermosphere from TIMED GUVI and ground-based photometer observations, *J. Geophys. Res.*, 117, A03302, doi:10.1029/2011JA017146.
6. Hecht J.H., T. Mulligan, D. J. Strickland, A. J. Kochenash, Y. Murayama, Y.-M. Tanaka, D. S. Evans, M. G. Conde, E. F. Donovan, F. J. Rich, and D. Morrison, Satellite and ground-based observations of auroral energy deposition and the effects on thermospheric composition during large geomagnetic storms: the great geomagnetic storm of 20 November 2003, *J. Geophys. Res.*, 113, doi:10.1029/2007JA012365, 2008.
7. Iridium satellite wear out lifetime prediction, edited by James M. Womack, prepared for *Iridium Satellite LLC*, Aerospace Corporation Technical Report No. ATR-2006(5277)-2, 2006.
8. Jensen, E. A., P. P. Hick, M. M. Bisi, B. V. Jackson, J. Clover, and T. Mulligan. "Faraday rotation response to coronal mass ejection structure." *Solar Physics* 265, no. 1 (2010): 31-48.
9. Jordan, A. P., H. E. Spence, J. B. Blake, T. Mulligan, D. N. A. Shaul, and M. Galametz, Multipoint, high time resolution galactic cosmic ray observations associated with two interplanetary coronal mass ejections, *J. Geophys. Res.*, 114, A7, doi:10.1029/2008JA013891, 2009.

10. Li, Y., J. G. Luhmann, T. Mulligan, T. Hoeksema, N. Arge, O. C. StCyr, and S. Plunkett, Earthward-directed CMEs seen in large-scale coronal magnetic field changes SOHO/LASCO coronagraph and solar wind, *J. Geophys. Res.*, *104*, 2001.
11. Lynch B. J., A. A. Reinard, T. Mulligan, K. K. Reeves, C. E. Rakowski, J. C. Allred, Y. Li, J. M. Laming, P. J. MacNeice, and J. A. Linker (2011), Ionic Composition Structure of Coronal Mass Ejections in Axisymmetric Magnetohydrodynamic Models, *Astrophys. J.*, 740 112 doi:10.1088/0004-637X/740/2/112.
12. Möstl, C., et al. "Multi-point shock and flux rope analysis of multiple interplanetary coronal mass ejections around 2010 August 1 in the inner heliosphere." *The Astrophysical Journal*, *758.1* (2012): 10.
13. Meshishnek, M., J. and T. Mulligan, An Assessment of Potential Proton Damage to Solar Cell Coverglass Materials for the Juno Mission, prepared for NASA JPL, Aerospace Corporation Technical Report No. ATR-2008(5284)-14, 2008.
14. Mulligan, T., A. A. Reinard, B. J. Lynch, Advancing In Situ Modeling of ICMEs: New Techniques for New Observations, in press *J. Geophys. Res.*, 2013.
15. Mulligan, T., J. L. Roeder, C. L. Lemon, M. D. Looper, J. F. Fennell, M. J. Meshishnek, Modeling the Internal Charging of Spacecraft Dielectric Materials Using 1-D Simulation Code, in *Proceedings of the 2010 Spacecraft Charging Conference*, Albuquerque, New Mexico, 2011.
16. Mulligan, T., J. B. Blake, D. N. A. Shaul, J. J. Quenby, R. A. Leske, R. A. Mewaldt, Short-Period Variability of Energetic Particles Associated with Interplanetary Coronal Mass Ejections, in *Solar Wind Twelve*, ed. American Institute of Physics, 2010.
17. Mulligan, T., J. B. Blake, D. Shaul, J. J. Quenby, R. A. Leske, R. A. Mewaldt, and M. Galametz, Short-period variability in the galactic cosmic ray intensity: High statistical resolution observations and interpretation around the time of a Forbush decrease in August 2006, *J. Geophys. Res.*, *114*, A07105, doi:10.1029/2008JA013783, 2009.
18. Mulligan Skov, T. and J. L. Roeder, "Signal Enhancement for the Human Voice," in *Crosslink, The Aerospace Corporation Magazine of Advances in Aerospace Technology*, p. 41-43, 2009.
19. Mulligan Skov, T., "Effect of Solar Energetic Particles on the Space Environment," in *Crosslink, The Aerospace Corporation Magazine of Advances in Aerospace Technology*, p. 57, 2009.
20. Mulligan, T., J. B. Blake, R. A. Mewaldt, and R. A. Leske. "Unusual Observations during the December 2006 Solar Energetic Particle Events within an Interplanetary

Coronal Mass Ejection at 1 AU." In *AIP Conference Proceedings*, vol. 1039, p. 162. 2008.

21. Mulligan, T., J. B. Blake, D. Shaul, and J. Quenby. "Heliospheric Transient Structures Associated with Short-Period Variations in the GCR Flux," in *Proceedings of the 30th International Cosmic Ray Conference*, vol. 1, p.359, 2008.
22. Mulligan, T., J. B. Blake, D. Shaul, and J. Quenby. "Heliospheric Transient Structures Associated with Short-Period Variations in the GCR Flux," *Advances in Space Research* 36 (2005): 1534-1543.
23. Mulligan, T., J. B. Blake, J. E. Mazur, J. Quenby, and D. Shaul. "Local and non-local geometry of interplanetary coronal mass ejections (ICMEs): GCR short-period variations, and magnetic field modelling," In *International Cosmic Ray Conference*, vol. 1, p. 379. 2005.
24. Mulligan, T., J. B. Blake, R. Mewaldt, "Unusual solar energetic proton fluxes at 1 AU within an interplanetary CME." *Advances in Space Research* 36 (2005): 1534-1543.
25. Mulligan, T. and C. T. Russell, Multispacecraft modeling of the flux rope structure of interplanetary coronal mass ejections: Cylindrically symmetric versus nonsymmetric topologies, *J. Geophys. Res.*, 106, 10581-10596, 2001.
26. Mulligan, T., C. T. Russell, D. Elliott, J. T. Gosling, and J. G. Luhmann, Inversion studies of magnetic cloud structure at 0.7 AU: Solar cycle variation, *Geophys. Res. Lett.*, 28, 891-894, 2001.
27. Mulligan, T., C. T. Russell, B. J. Anderson, and M. H. Acuña, Multispacecraft modeling of the Bastille Day magnetic cloud, *Geophys. Res. Lett.*, 28, 4417-4420, 2001.
28. Mulligan, T., C. T. Russell, and J. G. Luhmann, Interplanetary magnetic clouds: Statistical patterns and radial variations, *Adv. Space Res.*, 26(5), 801-806, 2000.
29. Mulligan, T., C. T. Russell, B. J. Anderson, D. A. Lohr, B. A. Toth, L. J. Zanetti, M. H. Acuña, R. P. Lepping, J. T. Gosling, and J. G. Luhmann, Flux rope modeling of an interplanetary coronal mass ejection observed at Wind and NEAR, in *Solar Wind Nine*, edited by S. R. Habbal, R. Esser, J. V. Hollweg, and P. A. Isenberg, pp 689-692, American Institute of Physics, 1999.
30. Mulligan, T., C. T. Russell, and J. T. Gosling, On interplanetary coronal mass ejection identification at 1 AU, in *Solar Wind Nine*, edited by S. R. Habbal, R. Esser, J. V. Hollweg, and P. A. Isenberg, pp 693-696, American Institute of Physics, 1999.
31. Mulligan, T., Russell, C.T.; Gosling, J.T., On interplanetary coronal mass ejection identification at 1 AU, *AIP Conference Proceedings*, n 471, p 693-6, 1999.

32. Mulligan, T., C. T. Russell, B. J. Anderson, D. A. Lohr, D. Rust, B. A. Toth, L. J. Zanetti, M. H. Acuña, R. P. Lepping, and J. T. Gosling, Intercomparison of NEAR and Wind interplanetary coronal mass ejection observations, *J. Geophys. Res.*, *104*, 28,217-28,223, 1999.
33. Mulligan, T., C. T. Russell, and J. G. Luhmann, Solar cycle evolution of the structure of magnetic clouds in the inner heliosphere, *Geophys. Res. Lett.*, *25*, 2959-2962, 1998.
34. O'Brien, T.P., T. Mulligan Skov, S.G. Claudepierre, J.E. Mazur, J.B. Blake, J.F. Fennell, J.L. Roeder, Starks, M.J., Lindstrom, C.D., Requirements for low altitude space environment measurements to support situational awareness, anomaly resolution, and satellite design, *Aerospace Technical Operating Report*, 2012. TOR 2012(1550)-01.
35. Quenby J. J., T. Mulligan, J. B. Blake, and D. N. A. Shaul, Diffusion coefficients, short term cosmic ray modulation and convected magnetic structures, Advances in Astronomy special issue, *Cosmic Ray Variability: Century of Its Observations*, in press 2013.
36. Quenby, J. J., T. Mulligan, J. B. Blake, J. E. Mazur, and D. Shaul (2008), Local and nonlocal geometry of interplanetary coronal mass ejections: Galactic cosmic ray (GCR) short-period variations and magnetic field modeling, *J. Geophys. Res.*, *113*, A10102, doi:10.1029/2007JA012849.
37. Reinard, A. A., T. L. Mulligan, and B. J. Lynch. "Multipoint Data Analysis and Modeling of the May and November 2007 ICMEs." In *AIP Conference Proceedings*, vol. 1216, p. 436. 2010.
38. Reinard A. A., B. J. Lynch, and T. Mulligan, Composition structure of Interplanetary Coronal Mass Ejections from multispacecraft observations, modeling, and comparison with numerical simulations, 2012, *Astrophys. J.*, 761 175 doi:10.1088/0004-637X/761/2/175.
39. Roeder, J. L., T. Mulligan, C. L. Lemon, M. L. Looper, J. F. Fennell, Modeling and Analysis of SCATHA Surface Potential Measurements, Proceedings of the 2010 Spacecraft Charging Conference, Albuquerque, New Mexico, manuscript in preparation.
40. Russell, C. T. and T. Mulligan, The true dimensions of interplanetary coronal mass ejections, *Adv. Space Res.*, *29*, 301–306 2002.
41. Russell, C. T. and T. Mulligan, On the magnetosheath thickness of interplanetary coronal mass ejections, *Adv. Space Res.*, 2002.

42. Russell, C. T. and T. Mulligan, The 22-year variation of geomagnetic activity: Implications for the polar magnetic field of the Sun, *Geophys. Res. Lett.*, 22, 3287–3288, 1995.
43. Russell, C. T., T. Mulligan, M. Delva, T. L. Zhang, and K. Schwingenschuh, Reply to “Comment on ‘A simple test of the induced nature of the martian tail’ by C. T. Russell et al.” by P. L. Israelevich, *Planet. Space Sci.*, 45, 749-749, 1997.
44. Russell, C. T., T. Mulligan, M. Delva, T. L. Zhang, and K. Schwingenschuh, A simple test of the induced nature of the martian tail, *Adv. Space Res.*, 16(6), 69-73, 1995.
45. Russell, C. T., T. Mulligan, M. Delva, T. L. Zhang, and K. Schwingenschuh, A simple test of the induced nature of the martian tail, *Planet. Space Sci.*, 43, 875–880, 1995.
46. Russell C. T., T. Mulligan, and B. J. Anderson, Radial Variation of Magnetic Flux Ropes: Case Studies with ACE and NEAR, *Solar Wind 10*, AIP Conf. Proc. 679, pp. 121-124; doi:<http://dx.doi.org/10.1063/1.1618556>, 2002.
47. Russell C. T. and T. Mulligan, The Limitation of Bessel Functions for ICME Modeling, *Solar Wind 10*, AIP Conf. Proc. 679, pp. 125-128; doi:<http://dx.doi.org/10.1063/1.1618557>, 2002.
48. Rust D. M., B. J. Anderson, M. D. Andrews, M. H. Acuña, C. T. Russell, P. W. Schuck, and T. Mulligan, Comparison of Interplanetary Disturbances at the NEAR Spacecraft with Coronal Mass Ejections at the Sun, 2005 *ApJ* 621 524 doi:10.1086/427401.
49. Shaul D. et al., Solar and cosmic ray physics and the space environment: studies for and with LISA, Laser Interferometer Space Antenna—6th International LISA Symposium, edited by S.M. Merkowitiz and J.C. Livas, AIP Press, 172, 978-0-7354-0372-7/06, 2006.
50. Webb et al., Heliospheric imaging of 3-D density structures during the multiple coronal mass ejections of late July to early August 2010, *in-press, Solar Phys.*, 2012.