Education

PhD in Electrical Engineering with Concentration in Remote Sensing, CU-Boulder 2016
Dissertation Title: Multi-Spectral Sensor Driven Solar EUV Irradiance Models with Improved Spectro-Temporal Resolution for Space Weather Applications at Earth and Mars
Master of Engineering in Electrical Engineering, CU-Boulder 2014
Thesis Title: Mathematical Formulation of the Electric & Magnetic Emissions of the Downward Negative Lightning Leader
Master of Science in Physics, Georgia Tech 2009
Bachelor of Science in Engineering Physics, CU-Boulder 2007
Academic Honors: Summa Cum Laude, Distinguished Senior for Engineering Physics Program

Career History

Research Scientist II, Laboratory of Atmospheric & Space Physics 2/5/18 -Present
Post-Doctoral Research Scientist, Laboratory of Atmospheric & Space Physics 5/9/16 -2/4/18
Flight Program Instrument Engineer, Laboratory for Atmospheric & Space Physics 1/5/09-1/9/14
Tactical Communications Specialist, United States Air Force 11/98 - 7/03

Funded Research Proposals as Principle Investigator

LASP Internal R&D Grant, "An EUV Fourier Transform Spectrometer ...", 2014, 2016
PROBA2 Guest Investigator #7 Grant, "Inversion of LYRA Occultations ...", Apr. 2016
PROBA2 Guest Investigator #8 Grant, "Comparing ... thermospheres of Earth & Mars ...", Oct. 2017
PROBA2 Guest Investigator #9 Grant, "Investigating Tides... Thermosphere.", Dec. 2019
NASA Mars Data Analysis Program, “Exploring...Mars ..Atmosphere ...EUVM Occultations”, Apr. 2020
NASA HFORT Program, “OWLS Mission Phase A”, Jul. 2020
NASA Space Weather O2R Program, “Operational Thermospheric...SUVI ..Occultations”, Nov. 2020

Relevant Work Experience

Data Product Development Experience

- MAVEN EUVM Mars thermospheric density from solar occultations; lead science data developer.
- PROBA2 LYRA Earth thermospheric density from solar occultations; lead science data developer.
- MAVEN EUVM Spectral irradiance model, Level 3; lead science data developer.
- MAVEN EUVM Calibrated broadband irradiances, Level 2; lead science data developer.
- GOES-16 EXIS Spectral irradiance model, Level 1B; lead science data developer.

NASA Flight Program Science Instrument Team Participation

- EscaPADE SIMPLEX 2019 Selection (Mission Co-Investigator)
- MAVEN-EUVM (Instrument Scientist)
- GOES-R EXIS (Instrument Scientist)
- TIMED-SEE
- SDO/EVE Calibration Rocket

NASA Flight Program Hardware Engineering:

- GOES-R EXIS instrument development & calibration.
- MMS Axial Double Probe instrument environmental testing hardware & software development.
- SDO EVE Suborbital Calibration Rocket power & control system design.

NASA Flight Program Satellite & Instrument Operations Experience:

- Command Controller for SORCE, ICESat, QuikSCAT, SORCE
- MAVEN EUVM calibration and data processing
- Instrument operations for TIMED-SEE

Other Engineering and Development

- Developed optical model for Vacuum Ultraviolet Fourier Transform Spectrometer.

Experimental Skills

- FemtoAmp level device test-bed design and fabrication
- Analog electronics design.
- Printed circuit board layout and design.
- Laser system design and optical bread boarding with lenses, mirrors, gratings, lasers, etc..
- Science team support for 4 suborbital rocket launches from White Sands Missile Range, NM.
- Visiting science team support at synchrotron (NIST), proton (IUCF) & heavy ion (TAMU) accelerators.
- Soldering & machining for NASA Flight Program ground support equipment.
- Ultra High Vacuum system design & assembly.
- Cleanroom experience including NASA Flight VUV optics inspection & assembly.
- VUV light source applications: Deuterium lamps and hollow cathode glow discharge sources.
- Software skills: IDL, MATLAB, Python, LabVIEW, OrCAD Layout, OrCAD Capture, Solidworks, Zemax, Mac, PC, Unix.

Co-Authored Peer Reviewed Publications

1. **Thiemann, E. M. B**., Eparvier, F. G., Knoer, V., Al Muharrami, A., & Lillis, R. J. (2021). Solar Extreme Ultraviolet Irradiance Uncertainties for Planetary Studies. *Journal of Geophysical Research: Space Physics*, *126*(1)
2. Vandaele, A. C., Korablev, O., Daerden, F., Aoki, S., Thomas, I. R., Altieri, F., ... & Rodionov, D. (2019). Martian dust storm impact on atmospheric H 2 O and D/H observed by ExoMars Trace Gas Orbiter. *Nature*, *568*(7753), 521-525.
3. Thaller, S. A., Andersson, L., Pilinski, M. D., **Thiemann, E.,** Withers, P., Elrod, M., ... & Jenkins, G. (2020). Tidal Wave-Driven Variability in the Mars Ionosphere-Thermosphere System. *Atmosphere*, *11*(5), 521.
4. Chamberlin, P. C., Eparvier, F. G., Knoer, V., Leise, H., Pankratz, A., Snow, M., ... & Woods, T. N. (2020). The Flare Irradiance Spectral Model-Version 2 (FISM2). *Space Weather*, *18*(12), e2020SW002588.
5. Mendillo, M., Phillips, S. R., Narvaez, C., Mayyasi, M., **Thiemann, E.,** Benna, M., ... & Andersson, L. (2021). On the Altitude Patterns of Photo-Chemical-Equilibrium in the Martian Ionosphere: A Special Role for Electron Temperature. *Journal of Geophysical Research: Space Physics*, *126*(1), e2020JA028366.
6. Machol, J. L., Eparvier, F. G., Viereck, R. A., Woodraska, D. L., Snow, M., **Thiemann, E**., ... & Meisner, R. (2020). GOES-R Series Solar X-ray and Ultraviolet Irradiance. In *The GOES-R Series* (pp. 233-242). Elsevier.
7. Peterson, W. K., Andersson, L., Ergun, R., **Thiemann, E**., Pilinski, M., Thaller, S., ... & Stone, S. (2020). Sub-solar electron temperatures in the lower Martian ionosphere. *Journal of Geophysical Research: Space Physics*
8. **Thiemann, E.M.B**, Eparvier, F.G., Woodraska, D., Chamberlin, C., Machol, J., Eden, T., Jones, A.R., Meisner, R., Mueller, S., Snow, M., Viereck, R., and Woods, T.N. (2019) The GOES-R EUVS Model for EUV Irradiance Variability. *Journal of Space Weather and Space Climate* 9, A43.
9. Pilinski, M., Andersson, L., Fowler, C., Peterson, W. K., **Thiemann, E**., & Elrod, M. K. (2019). Electron Temperature Response to Solar Forcing in the Low-Latitude Martian Ionosphere. *Journal of Geophysical Research: Planets*, *124*(11), 3082-3094
10. Quémerais, E., **Thiemann, E**., Snow, M., Ferron, S., & Schmidt, W. (2019). Multiple Scattering Effects in the Interplanetary Medium: Evaluation Using SOHO SWAN and MAVEN EUVM Ly-a Measurements. *Journal of Geophysical Research: Space Physics*. 124(6), 3949-3960.

Pilinski, M., Andersson, L., Fowler, C., Peterson, W. K., **Thiemann, E**., & Elrod, M. K. (2019). Electron Temperature Response to Solar Forcing in the Low-Latitude Martian Ionosphere. *Journal of Geophysical Research: Planets*, *124*(11), 3082-3094.

11. Edberg, N. J., Johansson, F. L., Eriksson, A. I., Andrews, D. J., Hajra, R., Henri, P., ... & **Thiemann, E.** (2019). Solar flares observed by Rosetta at comet 67P/Churyumov-Gerasimenko. *Astronomy & Astrophysics*, *630*, A49.
12. Chu, F., Girazian, Z., Gurnett, D. A., Morgan, D. D., Halekas, J., Kopf, A. J., **Thiemann, E**., & Duru, F. (2019). The effects of crustal magnetic fields and solar EUV flux on ionopause formation at Mars. *Geophysical Research Letters*, *46*(17-18), 10257-10266.
13. Girazian, Z., Mahaffy, P., Lee, Y., & **Thiemann, E. M. B**. (2019). Seasonal, Solar Zenith Angle, and Solar Flux Variations of O+ in the Topside Ionosphere of Mars. *Journal of Geophysical Research: Space Physics*, *124*(4), 3125-3138.
14. Mayyasi, M., Clarke, J., Bhattacharyya, D., Chaufray, J.Y., Benna, M., Mahaffy, P., Stone, S., Yelle, R., **Thiemann, E**., Chaffin, M. and Deighan, J. "Seasonal Variability of Deuterium in the Upper Atmosphere of Mars." *Journal of Geophysical Research: Space Physics* 124.3 (2019): 2152-2164.
15. Sakai, S., Cravens, T.E., Andersson, L., Fowler, C.M., Mitchell, D.L., Mazelle, C., **Thiemann, E.M**., Eparvier, F.G., Brain, D.A. and Seki, K. (2019). Low electron temperatures observed at Mars by MAVEN on dayside crustal magnetic field lines. *Journal of Geophysical Research: Space Physics*.
16. Fang, X., Pawlowski, D., Ma, Y., Bougher, S., **Thiemann, E.,** Eparvier, F., Wang, W., Dong, C., Lee, C.O., Dong, Y. and Benna, M. (2019). Mars upper atmospheric responses to the 10 September 2017 solar flare: A global, time-dependent simulation. *Geophysical Research Letters*.
17. Girazian, Z., Luppen, Z., Morgan, D. D., Chu, F., Montabone, L., **Thiemann, E. M. B**., ... & Němec, F. (2019). Variations in the Ionospheric Peak Altitude at Mars in Response to Dust Storms: 13 Years of Observations from the Mars Express Radar Sounder. *Journal of Geophysical Research: Planets*
18. Jakosky, B. M., Brain, D., Chaffin, M., Curry, S., Deighan, J., Grebowsky, J., ... & Andersson, L. (2018). Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time. *Icarus*, *315*, 146-157.
19. Ruhunusiri, S., Halekas, J. S., Espley, J. R., Eparvier, F., Brain, D., Mazelle, C., ... & **Thiemann, E. M. B.** (2018). An Artificial Neural Network for Inferring Solar Wind Proxies at Mars. *Geophysical Research Letters*, *45*(20), 10-855.
20. Chamberlin, P.C., Woods, T.N., Didkovsky, L., Eparvier, F.G., Jones, A.R., Machol, J.L., Mason, J.P., Snow, M., **Thiemann, E.M.B**., Viereck, R.A. and Woodraska, D.L. (2018). Solar ultraviolet irradiance observations of the solar flares during the intense September 2017 storm period. *Space Weather*, *16*(10), 1470-1487.
21. Pilinski, M., Bougher, S., Greer, K., Thiemann, E., Andersson, L., Benna, M., & Elrod, M. (2018). First Evidence of Persistent Nighttime Temperature Structures in the Neutral Thermosphere of Mars. *Geophysical Research Letters*, *45*(17), 8819-8825.
22. Elrod, M. K., Curry, S. M., **Thiemann, E. M. B**., & Jain, S. K. (2018). September 2017 solar flare event: Rapid heating of the Martian neutral upper atmosphere from the X-class flare as observed by MAVEN. *Geophysical Research Letters*, *45*(17), 8803-8810.
23. Mayyasi, M., Bhattacharyya, D., Clarke, J., Catalano, A., Benna, M., Mahaffy, P., **Thiemann, E**., Lee, C.O., Deighan, J., Jain, S. and Chaffin, M. (2018). Significant space weather impact on the escape of hydrogen from Mars. *Geophysical Research Letters*, *45*(17), 8844-8852.
24. **Thiemann, E.M.B**., Eparvier, F.G., Bougher, S.W., Dominique, M., Andersson, L., Girazian, Z., Pilinski, M.D., Templeman, B. and Jakosky, B.M. (2018). Mars thermospheric variability revealed by MAVEN EUVM solar occultations: Structure at aphelion and perihelion and response to EUV forcing. *Journal of Geophysical Research: Planets*, *123*(9), 2248-2269.

25. **Thiemann, E.M.B**., Andersson, L., Lillis, R., Withers, P., Xu, S., Elrod, M., Jain, S., Pilinski, M.D., Pawlowski, D., Chamberlin, P.C. and Eparvier, F.G. (2018). The Mars topside ionosphere response to the X8. 2 solar flare of 10 September 2017. *Geophysical Research Letters*, *45*(16), 8005-8013.
26. Xu, S., **Thiemann, E**., Mitchell, D., Eparvier, F., Pawlowski, D., Benna, M., Andersson, L., Liemohn, M.W., Bougher, S. and Mazelle, C. (2018). Observations and modeling of the Mars low-altitude ionospheric response to the 10 September 2017 X-class solar flare. *Geophysical Research Letters*, *45*(15), 7382-7390.
27. Jain, S.K., Deighan, J., Schneider, N.M., Stewart, A.I.F., Evans, J.S., **Thiemann, E.M.B**., Chaffin, M.S., Crismani, M., Stevens, M.H., Elrod, M.K. and Stiepen, A. (2018). Martian thermospheric response to an X8. 2 solar flare on 10 September 2017 as seen by MAVEN/IUVS. *Geophysical Research Letters*, *45*(15), 7312-7319.
28. Mendillo, M., Erickson, P.J., Zhang, S.R., Mayyasi, M., Narvaez, C., **Thiemann, E**., Chamberlain, P., Andersson, L. and Peterson, W. (2018). Flares at Earth and Mars: An ionospheric escape mechanism?. *Space Weather*, *16*(8), 1042-1056.
29. Chaffin, M.S., Chaufray, J.Y., Deighan, J., Schneider, N.M., Mayyasi, M., Clarke, J.T., **Thiemann, E.**, Jain, S.K., Crismani, M.M.J., Stiepen, A. and Eparvier, F.G. (2018). Mars H escape rates derived from MAVEN/IUVS Lyman alpha brightness measurements and their dependence on model assumptions. *Journal of Geophysical Research: Planets*, *123*(8), 2192-2210.
30. Lee, Y., Dong, C., Pawlowski, D., **Thiemann, E**., Tenishev, V., Mahaffy, P., Benna, M., Combi, M., Bougher, S. and Eparvier, F. (2018). Effects of a solar flare on the Martian hot O corona and photochemical escape. *Geophysical Research Letters*, *45*(14), 6814-6822.
31. Peterson, W.K., Fowler, C.M., Andersson, L.A., **Thiemann, E.M.B**., Jain, S.K., Mayyasi, M., Esman, T.M., Yelle, R., Benna, M. and Espley, J. (2018). Martian Electron Temperatures in the Subsolar Region: MAVEN Observations Compared to a One-Dimensional Model. *Journal of Geophysical Research: Space Physics*, *123*(7), 5960-5973.
32. Lillis, R.J., Mitchell, D.L., Steckiewicz, M., Brain, D., Xu, S., Weber, T., Halekas, J., Connerney, J., Espley, J., Benna, M., Elrod, M. and **Thiemann, E**. et al. (2018). Ionizing electrons on the Martian nightside: Structure and variability. *Journal of Geophysical Research: Space Physics*, *123*(5), 4349-4363.
33. Ruhunusiri, S., Halekas, J.S., Espley, J.R., Eparvier, F., Brain, D., Mazelle, C., Harada, Y., DiBraccio, G.A., **Thiemann, E.M.B**., Larson, D.E. and Mitchell, D.L. (2018). One-Hertz Waves at Mars: MAVEN Observations. *Journal of Geophysical Research: Space Physics*, *123*(5), 3460-3476.
34. Rahmati, A., Larson, D.E., Cravens, T.E., Lillis, R.J., Halekas, J.S., McFadden, J.P., Mitchell, D.L., **Thiemann, E.M.B**., Connerney, J.E.P., Dunn, P.A. and Lee, C.O. (2018). Seasonal variability of neutral escape from Mars as derived from MAVEN pickup ion observations. *Journal of Geophysical Research: Planets*, *123*(5), 1192-1202.
35. **Thiemann, E. M. B**., Chamberlin, P. C., Eparvier, F. G., & Epp, L. (2018). Center-to-limb variability of hot coronal EUV emissions during solar flares. *Solar Physics*, *293*(2), 19.
36. **Thiemann, E.M.B**., Dominique, M., Pilinski, M.D. and Eparvier, F.G. (2017). Vertical thermospheric density profiles from EUV solar Occultations made by PROBA2 LYRA for solar cycle 24. *Space Weather*, *15*(12), 1649-1660.
37. Mayyasi, M., Clarke, J., Bhattacharyya, D., Deighan, J., Jain, S., Chaffin, M., **Thiemann, E.**, Schneider, N. and Jakosky, B. (2017). The variability of atmospheric deuterium brightness at Mars: Evidence for seasonal dependence. *Journal of Geophysical Research: Space Physics*, *122*(10), 10-811.
38. Johansson, F.L., Odelstad, E., Paulsson, J.J.P., Harang, S.S., Eriksson, A.I., Mannel, T., Vigren, E., Edberg, N.J., Miloch, W.J., Simon Wedlund, C. and **Thiemann, E**. (2017). Rosetta photoelectron emission and solar ultraviolet flux at comet 67P. *Monthly Notices of the Royal Astronomical Society*, *469*(Suppl_2), S626-S635.

39. Mendillo, M., Narvaez, C., Vogt, M.F., Mayyasi, M., Forbes, J., Galand, M., **Thiemann, E**., Benna, M., Eparvier, F., Chamberlin, P. and Mahaffy, P. (2017). Sources of ionospheric variability at Mars. *Journal of Geophysical Research: Space Physics*, *122*(9), 9670-9684.
40. **Thiemann, E.M**., Chamberlin, P.C., Eparvier, F.G., Templeman, B., Woods, T.N., Bougher, S.W. and Jakosky, B.M. (2017). The MAVEN EUVM model of solar spectral irradiance variability at Mars: Algorithms and results. *Journal of Geophysical Research: Space Physics*, *122*(3), 2748-2767.
41. Lillis, R.J., Deighan, J., Fox, J.L., Bougher, S.W., Lee, Y., Combi, M.R., Cravens, T.E., Rahmati, A., Mahaffy, P.R., Benna, M., Elrod, M.K. and **Thiemann E.** et al.(2017). Photochemical escape of oxygen from Mars: First results from MAVEN in situ data. *Journal of Geophysical Research: Space Physics*, *122*(3), 3815-3836.
42. Lee, C.O., Hara, T., Halekas, J.S., **Thiemann, E.**, Chamberlin, P., Eparvier, F., Lillis, R.J., Larson, D.E., Dunn, P.A., Espley, J.R. and Gruesbeck, J. (2017). MAVEN observations of the solar cycle 24 space weather conditions at Mars. *Journal of Geophysical Research: Space Physics*, *122*(3), 2768-2794.
43. Rahmati, A., Larson, D.E., Cravens, T.E., Lillis, R.J., Halekas, J.S., McFadden, J.P., Dunn, P.A., Mitchell, D.L., **Thiemann, E.M.B**., Eparvier, F.G. and DiBraccio, G.A. (2017). MAVEN measured oxygen and hydrogen pickup ions: Probing the Martian exosphere and neutral escape. *Journal of Geophysical Research: Space Physics*, *122*(3), 3689-3706.
44. **Thiemann, E. M.**, Eparvier, F. G., & Woods, T. N. (2017a). A time dependent relation between EUV solar flare light-curves from lines with differing formation temperatures. *Journal of Space Weather and Space Climate*, *7*, A36.
45. Bougher, S.W., Roeten, K.J., Olsen, K., Mahaffy, P.R., Benna, M., Elrod, M., Jain, S.K., Schneider, N.M., Deighan, J., **Thiemann, E**. and Eparvier, F.G. (2017). The structure and variability of Mars dayside thermosphere from MAVEN NGIMS and IUVS measurements: Seasonal and solar activity trends in scale heights and temperatures. *Journal of Geophysical Research: Space Physics*, *122*(1), 1296-1313.
46. Romanelli, N., Mazelle, C., Chaufray, J.Y., Meziane, K., Shan, L., Ruhunusiri, S., Connerney, J.E., Espley, J.R., Eparvier, F., **Thiemann, E.** and Halekas, J.S. "Proton cyclotron waves occurrence rate upstream from Mars observed by MAVEN: Associated variability of the Martian upper atmosphere." *Journal of Geophysical Research: Space Physics* 121.11 (2016).
47. Luhmann, J.G., Dong, C.F., Ma, Y.J., Curry, S.M., Li, Y., Lee, C.O., Hara, T., Lillis, R., Halekas, J., Connerney, J.E., **Thiemann, E.** et al. "Space Weather Storm Responses at Mars: Lessons from A Weakly Magnetized Terrestrial Planet." *Proceedings of the International Astronomical Union* 12.S328 (2016): 211-217.
48. Peterson, W.K., **Thiemann, E.M**., Eparvier, F.G., Andersson, L., Fowler, C.M., Larson, D., Mitchell, D., Mazelle, C., Fontenla, J., Evans, J.S. and Xu, S. "Photoelectrons and solar ionizing radiation at Mars: Predictions versus MAVEN observations." *Journal of Geophysical Research: Space Physics* 121.9 (2016): 8859-8870.
49. Sakai, S., Andersson, L., Cravens, T.E., Mitchell, D.L., Mazelle, C., Rahmati, A., Fowler, C.M., Bougher, S.W., **Thiemann, E**., Eparvier, F.G. and Fontenla, J.M.. "Electron energetics in the Martian dayside ionosphere: Model comparisons with MAVEN data." *Journal of Geophysical Research: Space Physics* 121.7 (2016): 7049-7066.
50. **Thiemann, E. M. B**., F. G. Eparvier, L. A. Andersson, C. M. Fowler, W. K. Peterson, P. R. Mahaffy, S. L. England et al. "Neutral density response to solar flares at Mars." *Geophysical Research Letters* (2015).
51. Rahmati, A., D. E. Larson, T. E. Cravens, R. J. Lillis, P. A. Dunn, J. S. Halekas, J. E. Connerney, F. G. Eparvier, **E. M. B. Thiemann**, and B. M. Jakosky. "MAVEN insights into oxygen pickup ions at Mars." *Geophysical Research Letters* (2015)

52. Chaffin, M. S., J. Y. Chaufray, J. Deighan, N. M. Schneider, W. E. McClintock, A. I. F. Stewart, **E. Thiemann** et al. "Three-dimensional structure in the Mars H corona revealed by IUVS on MAVEN." *Geophysical Research Letters* (2015).
53. Jain, S. K., A. I. F. Stewart, N. M. Schneider, J. Deighan, A. Stiepen, J. S. Evans, M. H. Stevens,..**E.M.B. Thiemann** et al. "The structure and variability of Mars upper atmosphere as seen in MAVEN/IUVS dayglow observations." *Geophysical Research Letters* (2015).
54. Chaufray, J. Y., J. Deighan, M. S. Chaffin, N. M. Schneider, W. E. McClintock, A. I. F. Stewart, S. K. Jain, … **E.M.B. Thiemann** et al. "Study of the Martian cold oxygen corona from the O I 130.4 nm by IUVS/MAVEN." *Geophysical Research Letters* (2015).
55. Evans, J. S., M. H. Stevens, J. D. Lumpe, N. M. Schneider, A. I. F. Stewart, J. Deighan, S. K. Jain, … **E.M.B Thiemann** et al. "Retrieval of CO2 and N2 in the Martian thermosphere using dayglow observations by IUVS on MAVEN." *Geophysical Research Letters* (2015).
56. Deighan, J., M. S. Chaffin, J-Y. Chaufray, A. I. F. Stewart, N. M. Schneider, S. K. Jain, A. Stiepen,… **E.M.B. Thiemann** et al. "MAVEN IUVS observation of the hot oxygen corona at Mars." *Geophysical Research Letters* (2015).
57. Jakosky, B. M., J. M. Grebowsky, J. G. Luhmann, J. Connerney, F. Eparvier, R. Ergun, J. Halekas,…**E. Thiemann** et al. (95 co-authors) "MAVEN observations of the response of Mars to an interplanetary coronal mass ejection." *Science* 350, no. 6261 (2015): aad0210.
58. Bougher, S., B. Jakosky, J. Halekas, J. Grebowsky, J. Luhmann, P. Mahaffy, J. Connerney ,… **E. Thiemann** et al. (95 co-authors) "Early MAVEN Deep Dip campaign reveals thermosphere and ionosphere variability." *Science* 350, no. 6261 (2015): aad0459.
59. Eparvier, F.G., Chamberlin, P.C., T.N. Woods, **Thiemann, E.M.B.** The Solar Extreme Ultraviolet Monitor for MAVEN. *Space Science Reviews*, 1-9,(2015)

Contributed Conference Presentations as First Author

1. **Thiemann, E**., Chamberlin, P. C., Epavier, F., & Woods, T. N. (2019, December). FISM-P: A Solar EUV and FUV Irradiance Model Optimized for Planetary Aeronomy. In *AGU Fall Meeting 2019*. AGU.
2. **Thiemann, E**., Entin, S., Bougher, S., Yigit, E., Bell, J., Pawlowski, D., Eparvier, F., "Observations of Ultrafast Kelvin Wave Breaking in the Mars Thermosphere" Joint European Planetary Science Conference/Division of Planetary Conference, Geneva, Switzerland, September 2019
3. **Thiemann, E**., Entin, S., Bougher, S., Yigit, E., Bell, J., Pawlowski, D., Eparvier, F., "Observations of Ultrafast Kelvin Wave Breaking in the Mars Thermosphere" " 9th International Mars Conference, Pasedena, CA July 2019
4. Pilinski, M., **Thiemann, E**., Jain, S., Stone, S., Lo, D., Yelle, R., Girazian, Z., Eparvier, F., Schneider, N., Benna, M., Bougher, S., "The MAVEN Neutral Data Working Group: Combining All MAVEN Neutral Measurements to Provide a Global Picture of Structure and Variability in the Mars Thermosphere" 9th International Mars Conference, Pasedena, CA July 2019
5. **Thiemann**, E., M. Dominique, M. West New Thermospheric Temperature Profiles from PROBA2 LYRA Solar Occultations, Chapman Conference on Scientific Challenges Pertaining to Space Weather Forecasting Including Extremes, P-73, Pasadena CA, 2/13/2019
6. **Thiemann**, **E**, F. Eparvier Characterizing Far-side Magnetogram EUV Irradiance Forecasts with EUV Irradiance Measurements Made from Mars, Chapman Conference on Scientific Challenges Pertaining to Space Weather Forecasting Including Extremes, P-42, Pasadena CA, 2/13/2019
7. **Thiemann, E.,** A New Window into Thermospheric Variability Provided by LYRA Occultations, PROBA2 Symposium, Redu Belgium, (Invited Talk) 2/8/2019

8. **Thiemann, E.,** Thermospheric Temperature and Abundance Profiles from PROBA2 LYRA, Royal Observatory of Belgium Weekly Seminar Series, Uccle Belgium, (Invited Talk) 2/5/2019
9. **Thiemann, E**., F. Eparvier, T. Woods, A. Jones, M. Snow, D. Woodraska, J. Machol The GOES EUVS Model: New Operational Spectral Irradiances from GOES-R, 2018 SDO Meeting, Session 1, Ghent Belgium, 11/2/2018
10. **Thiemann, E**., Progress Towards a More Physics-based Approach to Solar Flare Irradiance Modeling, , HAO Weekly Seminar Series, Boulder (Invited Talk) 10/17/2018
11. **Thiemann**, **E.M.B,** Greer, K., Pilinksi, M., Eparvier, F., et al. "The Occultation Wave Limb Sounder (OWLS) on INSPIRESat-3", COSPAR C2.4, Pasadena, (Invited Talk) 2018
12. **Thiemann**, **E.M.B,** Xu, S., Peterson, W.K., Eparvier, F.G., et al. "Validating Solar Soft X-ray Irradiance Models with Model-Measurement Comparisons of Photoelectron Spectra at Mars", COSPAR C3.2, Pasadena, 2018
13. **Thiemann**, **E.M.B**, L. Andersson, R. Lillis, P. Withers, S. Xu, M. Elrod, S. Jain *et al*. " The Response of the Mars Ionosphere to the X8.2 Solar Flare of 10 September 2017 " Triennial Earth Sun Summit. 311.06 (Oral Session) Leesburg, 2018.
14. **Thiemann**, **E.M.B**, Chamberlin, P, Eparvier, F., Woods, T. " Progress Towards a More Physics-based Approach to Solar Flare Irradiance Proxy Modeling." Triennial Earth Sun Summit. 409.05 (Oral Session) Leesburg, 2018.
15. **Thiemann**, **E.M.B**, Eparvier, F., Andersson, L., Pilinski, M., Chamberlin, P., Fowler, C. *et al*. " New Measurements of Mars Thermospheric Variability from MAVEN EUVM Solar Occultations." AGU Fall Meeting. P23D-2770 (Oral Session) 2017.
16. **Thiemann**, **E.M.B**, Eparvier, F., Andersson, L., Pilinski, M., Chamberlin, P., Fowler, C. "Mars Thermospheric Temperature Sensitivity to Solar EUV Forcing from the MAVEN EUV Monitor." AAS/Division for Planetary Sciences Meeting Abstracts. Vol. 49. 2017.
17. **Thiemann**, **E.M.B**., Epp, L., Eparvier, F., & Chamberlin, P. C. "The Dependence of Solar Flare Limb Darkening on Emission Peak Formation Temperature." AAS/Solar Physics Division Meeting. Vol. 48. 2017.
18. **Thiemann, E.M.B**, Eparvier, F.G. et al. "The GOES-16 Operational EUV Spectral Irradiance Model", Space Weather Workshop, Broomfield Colorado, April 2017
19. **Thiemann, E**.M.**B**., Eparvier, F.G., Chamberlin, P.C., Woods, T.N. "Irradiance Model Insights from the MAVEN and GOES-R Spectral Irradiance Models" GSFC CCMC Model Validation Working Group, Cocoa Beach Florida, April 2017
20. **Thiemann, E**.M.**B**., Eparvier, F.G., Chamberlin, P.C., Woods, T.N. "Uncertainty Associated with Using Earth-Based EUV Measurements to Estimate EUV Irradiance at Other Planets." AGU Fall Meeting Abstracts. 2016.
21. **Thiemann, E.M.B.**, Eparvier, F.G. "Improving Flare Irradiance Models with the Low Pass Filter Relation Between EUV Flare Emissions with Differing Formation Temperatures." SDO 2016: Unraveling the Sun's Complexity. 2016.
22. **Thiemann, E.M.B**, Eparvier, F.G. "A new relationship between soft X-rays and EUV flare light curves." AAS/Solar Physics Division Meeting, Vol. 47. 2016.
23. **Thiemann, E.M.B**, Eparvier, F.G. "A Lumped Element Thermal Model for Solar Flare Light Curves in the EUV", Space Weather Workshop, Broomfield Colorado, April 2016
24. **Thiemann, E.M.B**., Eparvier, F.G., Chaffin, M.S., Clarke, J.T. Density Retrievals of the Mars H Exosphere from MAVEN Solar Lyman-alpha Occultations. In 46th Lunar and Planetary Science Conference, Vol. 47, p. 2353, Oral Session, Houston, TX, (21-25 Mar. 2016)
25. **Thiemann, E.M.B.**, Eparvier, F.G., Chaffin, M.S., Clarke, J.T. Hydrogen corona temperature and density retrievals from solar Lyman-alpha occulation measurements of the Mars hydrogen corona. *Poster 4, Charles A. Barth Memorial Symposium*, Boulder, CO, 13-15 May, 2015
26. **Thiemann, E.M.B.**, Eparvier, F.G. A Lumped Element Thermal Model for Solar Flare Gradual Phase EUV Emissions for Planetary Atmosphere Studies *Oral Session, Triennial Earth-Sun Summit 2015*, Indianapolis, IN 26 April- 01 May, 2015

27. **Thiemann, E.M.B.**, Eparvier, F.G., Chaffin, M.S., Clarke, J.T. Solar Lyman Alpha Occultation Measurements of the Mars Hydrogen Corona. *Abstract 2780, Poster II-388, 46th Lunar and Planetary Science Conference*, Houston, TX, 16-20 Mar. 2015
28. **Thiemann, E.M.B.**, Eparvier, F.G., Chamberlin, P.C. FISM-P: Modeling Solar VUV Variability Throughout the Solar System. *Poster 4A-209 presented at 2014 Living With a Star Meeting*, Portland, OR, 2-6 Nov. 2014.
29. **Thiemann, E.M.B.**, Eparvier, F.G., Chamberlin, P.C. FISM-P: A Model of the VUV Irradiance Spectrum for Atmospheric Studies at Mars and Beyond, *Abstract P51B-3940 presented at 2014 Fall Meeting, AGU*. San Francisco, CA., 15-19 Dec. 2014.
30. **Thiemann, E.M.**, Gasiewski, A.J.. Time-domain Solution to Maxwell's Equations for a Lightning Dart Leader and Subsequent Return Stroke. *Proc. Of the XXXIth URSI GASS*, Beijing, China, 16-23 Aug. 2014

Co-Authored Technical Documents

1. **Thiemann, E.,** Ferrington, N. 2014, "EXIS Flight Model #2 Flat Field LED Image Stability Report ." LASP Agile Document #137767
2. **Thiemann, E.,** Klapetzky, M., Crotser, D., Passe, H. 2013, "XRS Flight Model #3 ^{55}Fe Calibration Over Temperature Report." LASP Agile Document #139419
3. Caspi, A., Woods, T. N., Jones, A., Klapetzky, M., & **Thiemann, E**. 2013, "EXIS/XRS Flight Model #3 Pre-Environmental SURF Calibration Report: August 2013." LASP Agile Document #135752
4. Caspi, A., Woods, T. N., Jones, A., Klapetzky, M., & **Thiemann, E**. 2013, "EXIS/XRS Flight Model #2 Pre-Environmental SURF Calibration Report: April 2013." LASP Agile Document #135750
5. Caspi, A., Woods, T. N., Jones, A., Klapetzky, M., & **Thiemann, E.** 2013, "EXIS/XRS Flight Model #1 Pre-Environmental SURF Calibration Report: July 2012." LASP Agile Document #133495
6. **Thiemann, E**., Ferrington, N. 2013, "EXIS Flight Model #1 Image Stability Report ." LASP Agile Document #133502
7. Caspi, A., Woods, T. N., Jones, A., Klapetzky, M., & **Thiemann, E**. 2012, "XRS Flight Model #1 Calibration Report: October 2011 SURF Trip." LASP Agile Document #128270
8. **Thiemann, E**., Dooley, S. 2012, "EUVS LED Radiation Test Report." LASP Agile Document #130738
9. **Thiemann, E**., Knappmiller, K., Dooley, S., Wrigley, R. 2012, "EUVS LED Life Test Report." LASP Agile Document #128763

Awards

Air Force Decorations:
Air Force Achievement Medal, Air Force Outstanding Unit Award (twice), Air Force Good Conduct Medal, National Defense Service Medal, Air Force Overseas Short Tour Ribbon, Air Force Longevity Service Award, Air Force Training Ribbon, Basic Maintenance Badge
NASA SORCE Mission Group Achievement Award, NASA, 2004
Summa Cum Laude Graduation Honors, Engineering Physics Program, University of Colorado, 2007
Distinguished Senior Award, Engineering Physics Program, University of Colorado, 2007
NASA TIMED-SEE Science Team Group Achievement Award, NASA, 2011
GOES-R NOAA/NASA Significant Achievement Team Award (for EXIS), NOAA/NASA, 2013
National Radio Science Meeting Travel Fellowship, URSI, 2014
University of Colorado Graduate School Travel Grant for URSI GASS in Beijing, China, 2014
Raytheon SVA $10,000 Merit/Leadership Scholarship, Raytheon/SVA, 2014
NASA Solar Physics Division Travel Grant for IRIS Workshop, May, 2015
NASA RHG Exceptional Achievement for Science, MAVEN Science Team, Mar. 2016
NASA RHG Exceptional Achievement for Science, Solar Dynamics Observatory Team, Mar. 2016
EOS Feature of Paper, " The MAVEN EUVM model of solar spectral irradiance ...", Apr. 2017
NASA Solar Dynamics Observatory Team Group Achievement Award, Feb.2018

Service

- Co-Editor for Journal Atmosphere Special Issue, "Observations and Measurements of the Martian Atmosphere"
- Session Co-Convener, Heliophysics General Contributions, AGU, Fall 2019
- Session Co-Convener, Solar Irradiance, Triennial Earth-Sun Summit, 2018
- Local Organizing Committee Chair, Int. Conf. on Mars Aeronomy, 2017
- Session Organizer, MAVEN Project Science Group Meeting
    - Seasonal and Solar Cycle Variability, 3/2019
    - A Global View of the Mars Thermosphere after 4 Years of MAVEN, 10/2018
    - (Co-Organizer) Space Weather at Ancient Mars, 11/16
    - (Co-Organizer) Space Weather at Mars, 3/16
- Group Leader for the MAVEN Neutral Data Working Group
- Journal Peer Reviewer for: JGR-Planets, JGR-Space, Icarus, J. of Planetary and Space Sci., J. of Atmos. Sci., Journal Atmosphere, J. of Solar, Terr. and Atmos. Phys.
- ISSI Solar Heliospheric Lyman-alpha Profile Effects, Bern Switzerland, 2016-2017
- CCMC-LWS Space Weather Assessment Working Groups, 2017-2018
    -Solar Indices and Irradiance Team
    -Neutral Density and Orbit Determination Team

Student Mentorship

Robert Sewell, University of Colorado, Aerospace Eng. Graduate Student, 2021-Present
Vicki Knoer, University of Colorado, Aerospace Eng. Graduate Student, 2019-Present
Hannah Holt, University of Colorado, Aerospace Eng. M.S. Graduate, 2018-2019
Thania Ruiz, University of Colorado, Summer REU Program, 2019
Henry Rook, Carleton College, Summer REU Program, 2017
Isabel Mills, Whitman College, Summer REU Program, 2016
Nick Entin, Peak to Peak High School, Science Research Seminar, Acad. Yr. 2018-2019
    -2nd Place for Space and Geosciences at Regional Science Fair, State Science Fair Qualifier
Thomas Ferguson, Monarch High School, Science Research Seminar, Acad. Yr. 2017-2018
Luke Epp, Monarch High School, Science Research Seminar, Acad. Yr. 2016-2017
    - Naval Science Award Winner at Regional Science Fair