

Craig A. Kletzing
Physics and Astronomy
Report includes January 1, 1960 to June 30, 2021
Curriculum Vitae as of June 28, 2021

Campus Address: 502 VAN, University of Iowa
Phone: (319) 335-1904
E-mail: craig-kletzing@uiowa.edu

EDUCATION AND PROFESSIONAL HISTORY

Higher Education

1989 **PhD**, Physics, University of California, San Diego
1983 **MS**, Physics, University of California, San Diego
1981 **BA**, Physics, Departmental Honors, University of California, Berkeley

Professional and Academic Positions

2005 - Present **Professor**, University of Iowa
1996 - 2005 **Associate Professor**, University of Iowa
1995 - 1996 **Research Associate Professor**, University of New Hampshire
1989 - 1995 **Research Assistant Professor**, University of New Hampshire
1993 - 1994 **Visiting Scientist**, Max-Planck-Institut für extraterrestrische Physik Garching
1988 - 1989 **Research Associate**, University of Alabama
1989 **Assistant Research Professor**, University of Alabama
1987 - 1988 **NASA Graduate Student Researcher**, University of California

Honors and Awards

2022 **Named Fellow of the American Physical Society**
2019 - Present **Donald A. and Marie B. Gurnett Chair**
2016 - Present **Distinguished Lecturer**, American Physical Society Division of Plasma Physics
2011 - 2019 **F. Wendell Miller Professor**
2008 **International Visiting Research Fellowship**, University of Sydney
2008 **Regent's Award for Faculty Excellence**
2007 **President and Provost Award for Teaching Excellence**
2006 **College of Liberal Arts and Sciences Teaching Award**
2002 - 2003 **Faculty Scholar**, University of Iowa
1999 **Project Kaleidoscope Faculty for the 21st Century**
1997 **Editor's Citation for Excellence in Reviewing**, Geophysical Research Letters

Memberships

American Physical Society
Asia Oceana Geophysical Society
Committee on Space Research
Union Radio Scientifique Internationale
2017 - Present American Association for the Advancement of Science
1983 - Present American Geophysical Union

TEACHING

Courses Taught at the University of Iowa

Term	Course#	Title	Ten-Day Enrollment	Final Enrollment
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Term	Course#	Title	Ten-Day Enrollment	Final Enrollment
Fall 2022	PHYS:7990:2387	Research: Physics	1	1
Spring 2022	PHYS:7990:2387	Research: Physics	1	1
Spring 2022	PHYS:1512:000A	College Physics II	288	286
Fall 2021	PHYS:1511:0AAA	College Physics I	250	281
Spring 2021	PHYS:7990:2387	Research: Physics	1	1
Fall 2020	PHYS:1511:0AAA	College Physics I	250	281
Fall 2020	PHYS:7990:0126	Research: Physics	2	2
Spring 2020	PHYS:1512:000A	College Physics II	288	288
Spring 2020	PHYS:7990:7361	Research: Physics	3	3
Fall 2019	PHYS:1511:0AAA	College Physics I	286	286
Fall 2019	PHYS:7990:5837	Research: Physics	2	2
Spring 2019	PHYS:1512:000A	College Physics II	285	285
Spring 2019	PHYS:7990:4266	Research: Physics	1	1
Spring 2019	PHYS:4999:4511	Undergraduate Research	1	1
Fall 2018	PHYS:7990:1552	Research: Physics	1	
Summer 2018	PHYS:7990:1809	Research: Physics	1	
Spring 2018	PHYS:7990:0058	Research: Physics	2	
Fall 2017	PHYS:1612:000A	Introductory Physics II	84	
Fall 2017	PHYS:1612:000B	Introductory Physics II	111	
Fall 2017	PHYS:1612:000C	Introductory Physics II	65	
Fall 2017	PHYS:1612:000D	Introductory Physics II	96	
Fall 2017	PHYS:7990:6824	Research: Physics	2	
Spring 2017	PHYS:1611:000A	Introductory Physics I	294	
Spring 2017	PHYS:1611:000B	Introductory Physics I	210	
Spring 2017	PHYS:7990:5640	Research: Physics	2	
Fall 2016	PHYS:7990:2664	Research: Physics	2	

Term	Course#	Title	Ten-Day Enrollment	Final Enrollment
Spring 2016	PHYS:1611:000A	Introductory Physics I	297	
Spring 2016	PHYS:1611:000B	Introductory Physics I	171	
Spring 2016	GRAD:7400:0011	Practicum in College Teaching	1	
Spring 2016	GRAD:7400:0024	Practicum in College Teaching	1	
Spring 2016	PHYS:7990:0032	Research: Physics	2	
Fall 2015	PHYS:7990:0032	Research: Physics	2	
Summer 2015	PHYS:7990:0032	Research: Physics	1	
Spring 2015	PHYS:1611:0AAA	Introductory Physics I	303	
Spring 2015	PHYS:1611:0BBB	Introductory Physics I	120	
Spring 2015	PHYS:1611:0CCC	Introductory Physics I	12	
Spring 2015	GRAD:7400:0007	Practicum in College Teaching	1	
Spring 2015	PHYS:7990:0032	Research: Physics	1	
Fall 2014	PHYS:7990:0032	Research: Physics	2	
Summer 2014	029:281:032	Research: Physics	1	
Spring 2014	029:012:00A	College Physics II	254	
Spring 2014	029:281:032	Research Physics	1	
Fall 2013	029:081:00A	Introductory Physics I	223	
Spring 2013	029:011:00A	College Physics I	159	
Spring 2013	029:281:032	Research Physics	2	
Fall 2012	029:281:032	Research Physics	2	
Spring 2012	029:028:AAA	Physics II	29	
Spring 2012	029:281:032	Research Physics	2	
Fall 2011	029:027:00A	Physics I	40	
Fall 2011	029:281:032	Research Physics	2	
Summer 2011	029:281:032	Research Physics	1	
Spring 2011	029:281:032	Research Physics	1	

Term	Course#	Title	Ten-Day Enrollment	Final Enrollment
Fall 2010	029:281:032	Research Physics	1	
Spring 2010	029:130:001	Electricity and Magnetism II	16	
Spring 2010	029:281:032	Research Physics	1	

Innovations in Teaching (Other Teaching Contributions)

Extramural Teaching Activities

Oct 2013 - Oct 2013 UI Senior College course on Space Weather

Jul 1996 - Jul 1996 Elder Hostel course at the University of New Hampshire on "The Physics of Everyday Life"

Student Mentoring

BS - Advisor

2008 - 2009 Weisenstein, Carl; *Withdrawn*, not registered in Fall 2009

BS - Supervised Research

2014 - 2017 McLeath, MacKenzie

2012 - 2014 Wroblewski, Henry

2010 - 2011 Maxwell, Alicia; *Completed*

2009 - 2011 King, Chris; *Completed*

2008 - 2009 Tucker, Mark

MS - Advisor, Chair

2012 - 2014 Kooi, Vanessa; *Completed*

2008 - 2009 Larson, Michael; *Completed*

2002 - 2004 McGivern, Carrie; *Completed*

2000 - 2002 Hiner, Jason; *Completed*

PhD - Advisor, Chair

Jan 2019-present Connor Feltman, in process

May 2015 -
December 2020 Afshari, Arya; *Completed*

May 2013 -
Summer 2018 De Pasucale, Sebastian; *Completed*

2009 - 2013	Kaeppler, Steven; <i>Completed</i>
2004 - 2009	Thuecks, Derek; <i>Completed</i>
2004 - 2008	Breneman, Aaron; <i>Completed</i>
1996 - 1998	Dors, Eric; <i>Completed</i>

PhD - Comprehensive Exam, Chair

November 2015	De Pascuale, Sebastian; <i>Completed</i>
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PhD - Comprehensive Exam, Member

December 2016	Verniero, Jennifer; <i>Completed</i>
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PhD - Dissertation Committee Member

June 2016	DeRoo, Casey; <i>Completed</i>
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PhD - Supervised Research

May 2019 - Present	Feltman, Connor; <i>In Process</i>
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Postdoctoral Research Supervision

April 2015 - 2018	Hartley, David, R. Hartley was promoted to assistant research scientist.
2009 - 2012	Drake, Dareth (Jan); <i>Completed</i>
2003 - 2005	Sigsbee, Kristine; <i>Completed</i>
2002 - 2004	Chen, Li-Jen
1999 - 2001	Bounds, Scott

SCHOLARSHIP**Publications**

CLAS * System * = Senior Author, Major Contribution, ** = Secondary Contribution *** = Equal Contribution, **** = Minor Contribution

Refereed Articles

- Breneman, A. W., J. R. Wygant, S. Tian, C. A. Cattell, S. A. Thaller, K. Goetz, E. Tyler, C. Colpitts, L. Dai, K. Kersten, J. W. Bonnell, S. D. Bale, F. S. Mozer, P. R. Harvey, G. Dalton, R. E. Ergun, D. M. Malaspina, C. A. Kletzing, W. S. Kurth, G. B. Hospodarsky, C. Smith, R. H. Holzworth, S. Lejosne, O. Agapitov, A. Artemyev, M. K. Hudson, R. J. Strangeway, D. N. Baker, X. Li, J. Albert, J. C. Foster, P. J. Erickson, C. C. Chaston, I. Mann, E. Donovan, C. M. Cully, V. Krasnoselskikh, J. B. Blake, R. Millan and A. J. Halford (2022). "The Van Allen Probes Electric Field and Waves Instrument: Science Results, Measurements, and Access to Data (Vol 218, 69, 2022)." *Space Science Reviews* 218(8).
- Fuselier, S. A., C. A. Kletzing, S. M. Petrinc, K. J. Trattner, D. George, S. R. Bounds, R. P. Sawyer, J. W. Bonnell, J. L. Burch, B. L. Giles and R. J. Strangeway (2022). "Multiple Reconnection X-Lines at the Magnetopause and Overlapping Cusp Ion Injections." *Journal of Geophysical Research-Space Phys*
- Hartley, D. P., L. Chen, I. W. Christopher, C. A. Kletzing, O. Santolik, W. Li and R. Shi (2022). "The Angular Distribution of Lower Band Chorus Waves Near Plasmaspheric Plumes." *Geophysical Research Letters* 49(9).
- Hartley, D. P., I. W. Christopher, C. A. Kletzing, W. S. Kurth, O. Santolik, I. Kolmasova, J. R. Wygant and J. W. Bonnell (2022). "Quantifying the Sheath Impedance of the Electric Double Probe Instrument on the Van Allen Probes." *Journal of Geophysical Research-Space Physics* 127(5).
- Nose, M., A. Matsuoka, Y. Miyoshi, K. Asamura, T. Hori, M. Teramoto, I. Shinohara, M. Hirahara, C. A. Kletzing, C. W. Smith, R. J. MacDowall, H. E. Spence, G. D. Reeves and J. W. Gjerloev (2022). "Flux Enhancements of Field-Aligned Low-Energy O⁺ Ion (FALEO) in the Inner Magnetosphere: A Possible Source of Warm Plasma Cloak and Oxygen Torus." *Journal of Geophysical Research-Space Physics*

- 127(3).
6. Ripoll, J. F., T. Farges, D. M. Malaspina, G. S. Cunningham, G. B. Hospodarsky, C. A. Kletzing and J. R. Wygant (2022). "Propagation and dispersion of lightning-generated whistlers measured from the Van Allen Probes (vol 9, 722355, 2021)." *Frontiers in Physics* 10.
 7. Ripoll, J. F., T. Farges, D. M. Malaspina, G. S. Cunningham, E. H. Lay, G. B. Hospodarsky, C. A. Kletzing, J. R. Wygant, S. Pedebay and Ieee (2022). From the Electromagnetic Power of Lightning on Earth to Lightning-Generated Whistlers in Space. 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), Spain.
 8. Ripoll, J. F., S. A. Thaller, D. P. Hartley, G. S. Cunningham, V. Pierrard, W. S. Kurth, C. A. Kletzing and J. R. Wygant (2022). "Statistics and Empirical Models of the Plasmasphere Boundaries From the Van Allen Probes for Radiation Belt Physics." *Geophysical Research Letters* 49(21).
 9. Afshari, A. S., Howes, G. G., Kletzing, C. A., Hartley, D. P., & Boardsen, S. A. (2021). The Importance of Electron Landau Damping for the Dissipation of Turbulent Energy in Terrestrial Magnetosheath Plasma. *Journal of Geophysical Research-Space Physics*, 126(12). doi:10.1029/2021ja029578
 10. Jun, C. W., Miyoshi, Y., Kurita, S., Yue, C., Bortnik, J., Lyons, L., . . . Shinohara, I. (2021). The Characteristics of EMIC Waves in the Magnetosphere Based on the Van Allen Probes and Arase Observations. *Journal of Geophysical Research-Space Physics*, 126(6). doi:10.1029/2020ja029001
 11. Moser, C., LaBelle, J., Roglans, R., Bonnell, J. W., Cairns, I. H., Feltman, C., . . . Fuselier, S. A. (2021). Modulated Upper-Hybrid Waves Coincident With Lower-Hybrid Waves in the Cusp. *Journal of Geophysical Research-Space Physics*, 126(9). doi:10.1029/2021ja029590
 12. Paschmann, G., Quinn, J. M., Torbert, R. B., McIlwain, C. E., Vaith, H., Haaland, S., . . . Haerendel, G. (2021). Results of the Electron Drift Instrument on Cluster. *Journal of Geophysical Research-Space Physics*, 126(6). doi:10.1029/2021ja029313
 13. Ripoll, J. F., Denton, M. H., Hartley, D. P., Reeves, G. D., Malaspina, D., Cunningham, G. S., . . . Ukhorskiy, A. Y. (2021). Scattering by whistler-mode waves during a quiet period perturbed by substorm activity. *Journal of Atmospheric and Solar-Terrestrial Physics*, 215. doi:10.1016/j.jastp.2020.105471
 14. Ripoll, J. F., Farges, T., Malaspina, D. M., Cunningham, G. S., Hospodarsky, G. B., Kletzing, C. A., & Wygant, J. R. (2021). Propagation and Dispersion of Lightning-Generated Whistlers Measured From the Van Allen Probes. *Frontiers in Physics*, 9. doi:10.3389/fphy.2021.722355
 15. Ripoll, J. F., Farges, T., Malaspina, D. M., Cunningham, G. S., Lay, E. H., Hospodarsky, G. B., . . . Pedebay, S. (2021). Electromagnetic power of lightning superbolts from Earth to space. *Nature Communications*, 12(1). doi:10.1038/s41467-021-23740-6
 16. Santolik, O., Miyoshi, Y., Kolmasova, I., Matsuda, S., Hospodarsky, G. B., Hartley, D. P., . . . Kletzing, C. A. (2021). Inter-Calibrated Measurements of Intense Whistlers by Arase and Van Allen Probes. *Journal of Geophysical Research-Space Physics*, 126(9). doi:10.1029/2021ja029700
 17. Sawyer, R. P., Fuselier, S. A., Kletzing, C. A., Bonnell, J. W., Roglans, R., Bounds, S. R., . . . George, D. (2021). TRICE 2 Observations of Low-Energy Magnetospheric Ions Within the Cusp. *Journal of Geophysical Research-Space Physics*, 126(9). doi:10.1029/2021ja029382
 18. Schroeder, J. W. R., Howes, G. G., Kletzing, C. A., Skiff, F., Carter, T. A., Vincena, S., & Dorfman, S. (2021). Laboratory measurements of the physics of auroral electron acceleration by Alfvén waves. *Nature Communications*, 12(1). doi:10.1038/s41467-021-23377-5
 19. *** Ripoll, J.-F., Denton, M. H., Hartley, D. P., Reeves, G. D., Malaspina, D., Cunningham, G. S., Santolik, O., Thaller, S. A., Loidan, V., Fennell, J. F., Turner, D. L., Kurth, W. S., Kletzing, C. A., Henderson, M. G., Ukhorskiy, A. Y. (2021). Scattering by whistler-mode waves during a quiet period perturbed by substorm activity. *JOURNAL OF ATMOSPHERIC AND SOLAR-TERRESTRIAL PHYSICS*, 215.
 20. ** Moser, C., LaBelle, J., Hatch, S., Moen, J. I., Spicher, A., Takahashi, T., Kletzing, C. A., Bounds, S., Oksavik, K., Sigernes, F., Yeoman, T. K. (2021). The Cusp as a VLF Saucer Source: First Rocket Observations of Long-Duration VLF Saucers on the Dayside. *GEOPHYSICAL RESEARCH LETTERS*, 48(2).
 21. *** Korotova, G., Sibeck, D., Engebretson, M., Balikhin, M., Thaller, S., Kletzing, C., Spence, H., Redmon, R. (2020). Multipoint observations of compressional Pc5 pulsations in the dayside magnetosphere and corresponding particle signatures. *ANNALES GEOPHYSICAE*, 38(6), 1267-1281.
 22. *** Colpitts, C., Miyoshi, Y., Kasahara, Y., Delzanno, G. L., Wygant, J. R., Cattell, C. A., Breneman, A., Kletzing, C., Cunningham, G., Hikishima, M., Matsuda, S., Katoh, Y., Ripoll, J.-F., Shinohara, I.,

- Matsuoka, A. (2020). First Direct Observations of Propagation of Discrete Chorus Elements From the Equatorial Source to Higher Latitudes, Using the Van Allen Probes and Arase Satellites. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(10).
23. *** Vasquez, B. J., Smith, C. W., Paulson, K. W., Kletzing, C. A. (2020). Flight Calibration of the Van Allen Probe Magnetometers. *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*, 250(1).
 24. *** Martinez-Calderon, C., Nemec, F., Katoh, Y., Shiokawa, K., Kletzing, C., Hospodarsky, G., Santolik, O., Kasahara, Y., Matsuda, S., Kumamoto, A., Tsuchiya, F., Matsuoka, A., Shoji, M., Teramoto, M., Kurita, S., Miyoshi, Y., Ozaki, M., Nishitani, N., Oinats, A. V., Kurkin, V. I. (2020). Spatial Extent of Quasiperiodic Emissions Simultaneously Observed by Arase and Van Allen Probes on 29 November 2018. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(9).
 25. *** Hanzelka, M., Santolik, O., Omura, Y., Kolmasova, I., Kletzing, C. A. (2020). A Model of the Subpacket Structure of Rising Tone Chorus Emissions. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(8).
 26. *** Ma, Q., Connor, H. K., Zhang, X.-J., Li, W., Shen, X.-C., Gillespie, D., Kletzing, C. A., Kurth, W. S., Hospodarsky, G. B., Claudepierre, S. G., Reeves, G. D., Spence, H. E. (2020). Global Survey of Plasma Sheet Electron Precipitation due to Whistler Mode Chorus Waves in Earth's Magnetosphere. *GEOPHYSICAL RESEARCH LETTERS*, 47(15).
 27. *** Nose, M., Matsuoka, A., Kumamoto, A., Kasahara, Y., Teramoto, M., Kurita, S., Goldstein, J., Kistler, L. M., Singh, S., Gololobov, A., Shiokawa, K., Imajo, S., Oimatsu, S., Yamamoto, K., Obana, Y., Shoji, M., Tsuchiya, F., Shinonara, I., Miyoshi, Y., Kurth, W. S., Kletzing, C. A., Smith, C. W., MacDowal, R. J., Spence, H., Reeves, G. D. (2020). Oxygen torus and its coincidence with EMIC wave in the deep inner magnetosphere: Van Allen Probe B and Arase observations. *EARTH PLANETS AND SPACE*, 72(1).
 28. *** Zhang, X.-J., Mourenas, D., Artemyev, V. A., Angelopoulos, V., Kurth, W. S., Kletzing, C. A., Hospodarsky, G. B. (2020). Rapid Frequency Variations Within Intense Chorus Wave Packets. *GEOPHYSICAL RESEARCH LETTERS*, 47(15).
 29. **** Medeiros, C., Souza, V. M., Vieira, L. E. A., Sibeck, D. G., Remya, B., Da Silva, L. A., Alves, L. R., Marchezi, J. P., Jauer, P. R., Rockenbach, M., Dal Lago, A., Kletzing, C. A. (2020). Electromagnetic Ion Cyclotron Waves Pattern Recognition Based on a Deep Learning Technique: Bag-of-Features Algorithm Applied to Spectrograms. *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*, 249(1).
 30. *** Hendry, A. T., Santolik, O., Miyoshi, Y., Matsuoka, A., Rodger, C. J., Clilverd, M. A., Kletzing, C. A., Shoji, M., Shinohara, I. (2020). A Multi-Instrument Approach to Determining the Source-Region Extent of EEP-Driving EMIC Waves. *GEOPHYSICAL RESEARCH LETTERS*, 47(7).
 31. *** Sigsbee, K., Kletzing, C. A., Faden, J. B., Jaynes, A. N., Reeves, G. D., Jahn, J.-M. (2020). Simultaneous Observations of Electromagnetic Ion Cyclotron (EMIC) Waves and Pitch Angle Scattering During a Van Allen Probes Conjunction. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(4).
 32. ** Ripoll, J.-F., Farges, T., Malaspina, D. M., Lay, E. H., Cunningham, G. S., Hospodarsky, G. B., Kletzing, C. A., Wygant, J. R. (2020). Analysis of Electric and Magnetic Lightning-Generated Wave Amplitudes Measured by the Van Allen Probes. *GEOPHYSICAL RESEARCH LETTERS*, 47(6).
 33. *** Nemec, F., Tomori, A., Santolik, O., Boardsen, S. A., Hospodarsky, G. B., Kurth, W. S., Pickett, J. S., Kletzing, C. (2020). Fine Harmonic Structure of Equatorial Noise with a Quasiperiodic Modulation. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(3).
 34. *** Takahashi, K., Vellante, M., Del Corpo, A., Claudepierre, S. G., Kletzing, C., Wygant, J., Koga, K. (2020). Multiharmonic Toroidal Standing Alfvén Waves in the Midnight Sector Observed During a Geomagnetically Quiet Period. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 125(3).
 35. *** Ma, Q., Li, W., Bortnik, J., Kletzing, C. A., Kurth, W. S., Hospodarsky, G. B., Wygant, J. R. (2019). Global Survey and Empirical Model of Fast Magnetosonic Waves Over Their Full Frequency Range in Earth's Inner Magnetosphere. *JOURNAL OF GEOPHYSICAL RESEARCH-SPACE PHYSICS*, 124(12), 10270-10282.
 36. *** Jun, C. W., Yue, C., Bortnik, J., Lyons, L. R., Nishimura, Y., Kletzing, C., Wygant, J., Spence, H. (2019). A Statistical Study of EMIC Waves Associated With and Without Energetic Particle Injection From the Magnetotail. *Journal of Geophysical Research-Space Physics*, 124(1), 433-450. **Error! Hyperlink reference not valid.**
 37. *** Da Silva, L. A., Sibeck, D., Alves, L. R., Souza, V. M., Jauer, P. R., Claudepierre, S. G., Marchezi, J. P., Agapitov, Medeiros, C., Vieira, L. E. A., Wang, C., Jiankui, S., Liu, Z., Gonzalez, W., Dal Lago, A.,

- Rockenbach, M., Padua, M. B., Alves, M. V., Barbosa, M. V. G., Fok, M. C., Baker, D., Kletzing, C., Kanekal, S. G., Georgiou, M. (2019). Contribution of ULF Wave Activity to the Global Recovery of the Outer Radiation Belt During the Passage of a High-Speed Solar Wind Stream Observed in September 2014. *Journal of Geophysical Research-Space Physics*, 124(3), 1660-1678. **Error! Hyperlink reference not valid.**
38. *** Omura, Y., Hsieh, Y. K., Foster, J. C., Erickson, P. J., Kletzing, C. A., Baker, D. N. (2019). Cyclotron Acceleration of Relativistic Electrons Through Landau Resonance With Obliquely Propagating whistler-Mode Chorus Emissions. *Journal of Geophysical Research-Space Physics*, 124(4), 2795-2810. **Error! Hyperlink reference not valid.**
39. *** Jun, C. W., Yue, C., Bortnik, J., Lyons, L. R., Nishimura, Y., Kletzing, C. (2019). EMIC Wave Properties Associated With and Without Injections in The Inner Magnetosphere. *Journal of Geophysical Research-Space Physics*, 124(3), 2029-2045. **Error! Hyperlink reference not valid.**
40. *** Capannolo, L., Li, W., Ma, Q., Shen, X. C., Zhang, X. J., Redmon, R. J., Rodriguez, J. V., Engebretson, M. J., Kletzing, C. A., Kurth, W. S., Hospodarsky, G. B., Spence, H. E., Reeves, G. D., Raita, T. (2019). Energetic Electron Precipitation: Multievent Analysis of Its Spatial Extent During EMIC Wave Activity. *Journal of Geophysical Research-Space Physics*, 124(4), 2466-2483. **Error! Hyperlink reference not valid.**
41. *** Qin, M. R., Hudson, M., Li, Z., Millan, R., Shen, X. C., Shprits, Y., Woodger, L., Jaynes, A., Kletzing, C. (2019). Investigating Loss of Relativistic Electrons Associated With EMIC Waves at Low L Values on 22 June 2015. *Journal of Geophysical Research-Space Physics*, 124(6), 4022-4036. **Error! Hyperlink reference not valid.**
42. *** Ma, Q., Li, W., Yue, C., Thorne, R. M., Bortnik, J., Kletzing, C. A., Kurth, W. S., Hospodarsky, G. B., Reeves, G. D., Spence, H. E. (2019). Ion Heating by Electromagnetic Ion Cyclotron Waves and Magnetosonic Waves in the Earth's Inner Magnetosphere. *Geophysical Research Letters*, 46(12), 6258-6267. **Error! Hyperlink reference not valid.**
43. *** Gkioulidou, M., Ohtani, S., Ukhorskiy, A. Y., Mitchell, D. G., Takahashi, K., Spence, H. E., Wygant, J. R., Kletzing, C. A., Barnes, R. J. (2019). Low-Energy (< keV)O⁺ Ion Outflow Directly Into the Inner Magnetosphere: Van Allen Probes Observations. *Journal of Geophysical Research-Space Physics*, 124(1), 405-419. **Error! Hyperlink reference not valid.**
44. *** Hendry, A. T., Santolik, O., Kletzing, C. A., Rodger, C. J., Shiokawa, K., Baishev, D. (2019). Multi-instrument Observation of Nonlinear EMIC-Driven Electron Precipitation at sub-MeV Energies. *Geophysical Research Letters*, 46(13), 7248-7257. **Error! Hyperlink reference not valid.**
45. *** Zhang, X. J., Mourenas, D., Artemyev, A. V., Angelopoulos, V., Bortnik, J., Thorne, R. M., Kurth, W. S., Kletzing, C. A., Hospodarsky, G. B. (2019). Nonlinear Electron Interaction With Intense Chorus Waves: Statistics of Occurrence Rates. *Geophysical Research Letters*, 46(13), 7182-7190. **Error! Hyperlink reference not valid.**
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Refereed Book Chapters

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2. *** Schroeder, J. W. R., Skiff, F., Howes, G. G., Kletzing, C. A., Carter, T. A., Dorfman, S. (2015). Alfvénic Oscillations of the Electron Distribution Function: Linear Theory and Experimental Measurements. *Radiofrequency Power in Plasmas* (vol. 1689). **Error! Hyperlink reference not valid.**
3. Kletzing, C. Fields and waves influencing radiation belt dynamics - Results from the Van Allen Probes mission. G. Balasis, I. Daglis, & I. Mann (Eds.), *Waves, Particles and Storms in Geospace*. Oxford: Oxford University Press. Accepted/In Press August 2015
4. * Kaeppeler, S. R., Kletzing, C. A., Bounds, S. R., Gjerloev, J. W., Anderson, B. J., Korth, H., LaBelle, J. W., Dombrowski, M. P., Lessard, M., Pfaff, R. F., Rowland, D. E., Jones, S., Heinselman, C. J. (2012). Current Closure in the Auroral Ionosphere: Results From the Auroral Current and Electrodynamics Structure Rocket Mission. *Auroral Phenomenology and Magnetospheric Processes: Earth and Other Planets* (vol. 197, pp. 183-192). **Error! Hyperlink reference not valid.**
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6. *** Cattell, C., Crumley, J., Dombeck, J., Lysak, R., Kletzing, C., Peterson, W. K., Collin, H. (2001). Polar observations of solitary waves at high and low altitudes and comparison to theory. *Advances in Auroral Physics* (vol. 28, pp. 1631-1641). **Error! Hyperlink reference not valid.**
7. *** Toivanen, P. K., Baker, D. N., Peterson, W. K., Viljanen, A., Turner, N. E., Li, X., Kletzing, C. A. (2000). A substorm onset observed by the polar spacecraft in conjunction with the image chain. *Proceedings of the Fifth International Conference on Substorms* (vol. 443, pp. 337-340). **Error! Hyperlink reference not valid.**
8. *** Peterson, W. K., Toivanen, P. K., Li, X., Baker, D. N., Keiling, A., Wygant, J., Kletzing, C. A., Russell, C. T. (2000). Polar observations of two pseudobreakup events. *Proceedings of the Fifth International Conference on Substorms* (vol. 443, pp. 409-412). **Error! Hyperlink reference not valid.**

Conference Proceeding

1. *** Ripoll, J.-F., Denton, M., Loridan, V., Santolik, O., Malaspina, D., Hartley, D. P., Cunningham, G. S., Reeves, G., Thaller, S., Turner, D. L., Fennell, J. F., Drozdov, A. Y., Villa, J. S. Cervantes, Shprits, Y. Y., Chu, X., Hospodarsky, G., Kurth, W. S., Kletzing, C. A., Wygant, J., Henderson, M. G., Ukhorskiy, A. Y. (2020). How whistler mode hiss waves and the plasmasphere drive the quiet decay of radiation belts electrons following a geomagnetic storm. *14TH INTERNATIONAL CONFERENCE ON NUMERICAL MODELING OF SPACE PLASMA FLOWS (ASTRONUM-2019)* (vol. 1623).

Research Report

1. * (1995). *Electric fields above the aurora* (vol. MPE Report No. 259). Garching: MPE Jahresbericht/Annual Report 1994, , Max-Planck- Institut fuer extraterrestrische Physik.

Grants and Contracts

Funded

- | | |
|---------------------|---|
| Jul 2015 – Nov 2021 | <i>Twin Rockets to Investigate Cusp Electrodynamics-2 (TRICE-2)</i>
Funded by NASA. Award amount: (\$2,711,957.00) Number of Months: 0.75.
Investigator/s Craig Kletzing (Principal Investigator). |
| Jul 2016 - Sep 2021 | <i>The Electric and Magnetic Field Instrument Suite and Integrated Science JHU/APL contract no. 131802 under NASA prime contract no. NNN06AA01C</i>
Funded by Johns Hopkins University Applied Physics Laboratory. Award amount: (\$6,535,103.00). Investigator/s Craig Kletzing (Principal Investigator). |
| Jul 2005 – present | <i>University of Iowa MMS/EDI - Phases B/C/D/E - satellite project to investigate reconnection</i>
Funded by NASA. Award amount: (\$3,369,325.00). Investigator/s Craig Kletzing (Principal Investigator). |
| Jun 2019 - present | <i>Tandem Reconnection And Cusp Electrodynamics Reconnaissance Satellites</i> |

- Funded by NASA. Award amount: (\$115,000,000.00). Investigator/s Craig Kletzing (Principal Investigator). Project is selected to proceed, but contract is not yet in place.
- Feb 2018 - Jun 2019 *Tandem Reconnection And Cusp Electrodynamics Reconnaissance Satellites*
Funded by NASA. Award amount: (\$1,250,000.00). Investigator/s Craig Kletzing (Principal Investigator). Selected in August of 2017, contract is just now getting in place due to NASA delays.
- Jan 2017- Feb 2021 *Cusp Alfvén and Plasma Electrodynamics Rocket 2 (CAPER-2)*
Funded by Dartmouth College. Number of Months: 1.0. Investigator/s Craig Kletzing (Co-Investigator). Project has been selected for funding, but the sub-contract from Dartmouth is not yet in place.
- Sep 2006 - Jul 2016 *The Electric and Magnetic Field Instrument Suite with Integrated Science (EMFISIS) on the Radiation Belt Storm Probes (RBSP) -multi-instrument, two satellite experimental investigation*
Funded by NASA/JHU-APL. Award amount: (\$28,440,558.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jun 2012 - Jun 2015 *Cusp Alfvén and Plasma Electrodynamics Rocket (CAPER) - rocket project to measure waves and particles in the cusp region*
Funded by NASA. Award amount: (\$542,010.00). Investigator/s Craig Kletzing (Principal Investigator).
- Apr 2008 - Apr 2013 *Correlators and Particle Detectors for the Correlations of High frequencies and Auroral Roar Measurements 2 (CHARM 2) Rocket - rocket project to measure high frequency waves in the auroral region*
Funded by NASA. Award amount: (\$448,696.00). Investigator/s Craig Kletzing (Principal Investigator).
- Completed**
- Aug 2006 - Jul 2011 *Laboratory Investigation of Alfvénic Field Line Resonances and Electron Acceleration*
Funded by DOE. Award amount: (\$488,582.00). Investigator/s Craig Kletzing (Principal Investigator).
- Oct 2000 - Apr 2011 *EDI Calibration and Operations*
Funded by NASA (Subcontract from University of New Hampshire). Award amount: (\$238,730.00). Investigator/s Craig Kletzing (Principal Investigator).
- Aug 2005 - Jul 2009 *Correlators and Particle Detectors for the Correlations of High frequencies and Auroral Roar Measurements (CHARM) Rocket*
Funded by NASA. Award amount: (\$422,955.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jul 2005 - Jun 2009 *Multi-Spacecraft Observations of Chorus Dispersion and Source Location*
Funded by NASA. Award amount: (\$72,000.00). Investigator/s Craig Kletzing (Principal Investigator).
- Mar 2004 - Mar 2009 *Twin Rockets to Investigate Cusp Electrodynamics (TRICE)*
Funded by NASA. Award amount: (\$475,731.00). Investigator/s Craig Kletzing (Principal Investigator).
- Aug 2003 - Jul 2006 *Laboratory Investigation of Alfvén Wave Physics Related to Space Plasmas*
Funded by NSF. Award amount: (\$450,000.00). Investigator/s Craig Kletzing (Principal Investigator).
- Mar 2002 - Mar 2005 *Alfvén Wave Electron Acceleration on Realistic Auroral Field Lines*
Funded by NASA. Award amount: (\$232,443.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jan 1999 - Feb 2004 *Rocket Auroral Correlator Experiment*
Funded by NASA. Award amount: (\$428,376.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jan 2001 - Dec 2003 *Plasma Diagnostics for the HIBAR Experiment*
Funded by NASA. Award amount: (\$307,175.00). Investigator/s Craig Kletzing (Principal Investigator).

- Apr 1999 - Sep 2002 *Hydra Particle Studies*
Funded by NASA. Award amount: (\$135,000.00). Investigator/s Craig Kletzing (Investigator).
- Jul 1998 - Jun 2002 *Laboratory Investigation of Auroral Alfvén Wave Electron Acceleration*
Funded by NSF. Award amount: (\$370,207.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jan 2001 - Jun 2001 *Prototype Electron Detector Development*
Funded by CIFRE. Award amount: (\$9,234.00). Investigator/s Craig Kletzing (Principal Investigator).
- Apr 1997 - Mar 2000 *Study of Auroral Electron Acceleration by Kinetic Alfvén Waves*
Funded by NASA. Award amount: (\$261,000.00). Investigator/s Craig Kletzing (Co-Investigator).
- May 1995 - Aug 1999 *Kinetic Alfvén Wave Electron Acceleration on Auroral Field Lines*
Funded by NASA. Award amount: (\$171,930.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jun 1997 - Jun 1999 *Study for an Auroral Multi-Probe Satellite Mission (AMPS)*
Funded by NASA. Award amount: (\$33,240.00). Investigator/s Craig Kletzing (Co-Investigator).
- Aug 1996 - Mar 1999 *Hydra Particle Studies*
Funded by NASA. Award amount: (\$92,000.00). Investigator/s Craig Kletzing (Investigator).
- May 1997 - Apr 1998 *Correlator Development*
Funded by Carver Foundation. Award amount: (\$14,780.00). Investigator/s Craig Kletzing (Principal Investigator).
- May 1993 - Oct 1996 *Particle Measurements Above an Active Thunderstorm*
Funded by NASA. Award amount: (\$142,735.00). Investigator/s Craig Kletzing (Principal Investigator).
- Sep 1991 - Sep 1996 *Electron Beam Experiment Collaboration*
Funded by NASA. Award amount: (\$239,630.00). Investigator/s Craig Kletzing (Principal Investigator).
- Jun 1989 - Mar 1994 *Investigations of Auroral Turbulence and Solitary Structures*
Funded by NASA. Award amount: (\$664,090.00). Investigator/s Craig Kletzing (Co-Investigator).
- Aug 1991 - Jan 1993 *Model of Electron and Ion Distributions in the Open Magnetosphere*
Funded by NSF. Award amount: (\$40,000.00). Investigator/s Craig Kletzing (Co-Principal).

Invited Lectures and Conference Presentations

Department - Colloquium

- 2012 Department of Physics and Astronomy, *Building EMFISIS for the Radiation Belt Storm Probes: How Space Hardware is Developed*, The University of Iowa, Iowa City, Iowa, United States Presenters/Authors: Kletzing, Craig

International - Conference Presentation

- 2022 AT-AP-RASC 2022 Plenary Lecture (conference wide), *Automated Chorus Element Detection: Statistics of Wave Properties*, Gran Canaria, Spain.
- 2021 ICEAA-21, , *Chorus Element Properties: Statistics From Automated Chorus Detection*, IEEE, Honolulu, HI, USA
- 2019 AGU Fall Meeting, *The Twin Rockets to Investigate Cusp Electrodynamics 2 Mission*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, C. A., Fuselier, S. A., Bonnell, J. W., LaBelle, J., Moen, J.
- 2019 ICEAA-19, *Plasma Waves in the Inner Magnetosphere: Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen*

- 2019 Probes, IEEE, Granada Presenters/Authors: Kletzing, Craig A
 IPELS 2019, *Radiation Belt Wave Observations on the Van Allen Probes and Opportunities for Lab Experiments*, Tokyo, Japan Presenters/Authors: Kletzing, Craig A.
- 2019 AOGS 16th Annual Meeting, *Chorus Element Properties: Statistics From Automated Chorus Detection*, Asia Oceana Geosciences Society, Singapore, Singapore Presenters/Authors: Kletzing, Craig, Christopher, I. W., Sen Gupta, A.
- 2019 The Plasma Physics of the Magnetosphere, *Chorus Element Properties: Statistics from Automated Detectio*, Pollenzo, Italy Presenters/Authors: Kletzing, Craig
- 2019 24TH ESA SYMPOSIUM ON EUROPEAN ROCKET AND BALLOON PROGRAMMES AND RELATED RESEARCH, *The Twin Rockets to Investigate Cusp Electrodynamics 2 Mission*, European Space Agency, Essen Presenters/Authors: Kletzing, Craig
- 2018 42nd Assembly, *Chorus Element Properties: Statistics of Sweep Rate and Wave Power*, Committee on Space Research, Pasadena, California, United States Presenters/Authors: Kletzing, Craig
- 2018 2nd URSI Atlantic Radio Science Conference (URSI AT-RASC), *Recent Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Union Radio Scientifique Internationale, Gran Canaria, Spain Presenters/Authors: Kletzing, Craig
- 2018 Chapman Conference on Particle Dynamics in the Earth's Radiation Belts, *Chorus Element Properties: Statistics of From Automated Chorus Detection*, American Geophysical Union, Cascais, Portugal Presenters/Authors: Kletzing, Cragi
- 2017 American Geophysical Union Fall Meeting, *Wave-Particle Interactions in the Radiation Belts, Aurora, and Solar Wind: Opportunities for Lab Experiments*, American Geophysical Union, New Orleans, Louisiana, United States Presenters/Authors: Kletzing, Craig
- 2017 American Geophysical Union Fall Meeting, *A Space Plasma Physicist Goes to the Lab*, American Geophysical Union, New Orleans, Louisiana, United States Presenters/Authors: Kletzing, Craig
- 2017 Good Hope For Earth Sciences, *Chorus Element Properties: Statistics of Sweep Rate*, IAPSO-IAMAS-IAGA, Capetown, South Africa Presenters/Authors: Kletzing, Craig, Sen Gupta, Ananya
- 2017 The Magnetosphere: New Tools, New Thinking, New Results”, *Chorus Element Properties: Statistics of Sweep Rate*, Universidad de Chile, Puerto Varas, Chile Presenters/Authors: Kletzing, Craig, Sen Gupta, Ananya
- 2017 Asia Oceana Geosciences Society 14th Annual Meeting, *Recent Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Asia Oceana Geosciences Society, Singapore, Singapore Presenters/Authors: Kletzing, Craig
- 2017 Asia Oceana Geosciences Society 14th Annual Meeting, *Wave Heating of the Plasmasphere*, Asia Oceana Geosciences Society, Singapore, Singapore Presenters/Authors: Kletzing, Craig, Christopher, Ivar, Santolik, Ondrej, Kurth, William, Hospodarsky, George, Bounds, Scott
- 2017 Interrelationship Between Plasma Experiment in Laboratory and Space, *Radiation Belt Wave Observations on the Van Allen Probes and Opportunities for Lab Experiments*, UCLA, Rancho Bernardo, California, United States Presenters/Authors: Kletzing, Craig
- 2017 23rd ESA PAC Symposium, *Rocket Missions for Cusp Electrodynamics*, European Space Agency, Visby, Sweden Presenters/Authors: Kletzing, Craig

International - Invited Lecture

- 2017 URSI-ICTP School on Radio Physics, *Introduction to Space Plasmas: An Introduction to the Ionosphere and Inner Magnetosphere*, International Center for Theoretical Physics, Trieste, Italy Presenters/Authors: Kletzing, Craig
- 2017 URSI-ICTP School on Radio Physics, *Plasma Waves: Theory of Wave Propagation through Ionized Media in Near-Earth Space*, International Center for Theoretical

- Physics, Trieste, Italy Presenters/Authors: Kletzing, Craig
- 2016 2016 URSI Asia-Pacific Radio Science Conference (AP-RASC), *Whistler Wave Energy Flow in the Plasmasphere*, Unon Radio Scientifique Internationale, Seoul, Korea Presenters/Authors: Kletzing, Craig
- 2016 18th International Congress of Plasma Physics, *Recent Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Kaohsiung, Taiwan Presenters/Authors: Kletzing, Craig
- 2016 Dynamical Processes in Space Plasmas (Isradynamics), *Recent Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Ben Gurion University of the Negev, Dead Sea, Israel Presenters/Authors: Kletzing, Craig
- 2015 Cluster 15th and Double Star 10th Anniversary Workshop, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, ESA, Venice, Italy Presenters/Authors: Kletzing, Craig
- 2015 Unsolved Problems of Magnetospheric Physics, *Challenges in the Understanding of Auroral Physics*, Scarborough, United Kingdom
- 2015 26th General Assembly of the International Union of Geodesy and Geophysics (IUGG), *Statistics of Wave Properties of Plasmaspheric Hiss*, IUGG, Prague, Czech Republic Presenters/Authors: Kletzing, Craig
- 2015 International Workshop on Energetic Particle Processes of the Near Earth Space (IWEPPNES), *Statistics of Plasmaspheric Hiss Poynting Flux Direction*, CEA, Paris, France Presenters/Authors: Kletzing, Craig
- 2014 Geospace Revisited: A Cluster/MAARBLE/Van Allen Probes Conference, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Rhodes, Greece Presenters/Authors: Kletzing, C A
- 2014 XXXIth URSI General Assembly and Scientific Symposium, *Progress on Understanding Chorus Emissions From Data Of The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Beijing, China Presenters/Authors: Kletzing, C A
- 2014 XXXIth URSI General Assembly and Scientific Symposium, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Beijing, China Presenters/Authors: Kletzing, C A
- 2014 European Geosciences Union General Assembly, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Vienna, Austria Presenters/Authors: Kletzing, C A
- 2014 6th VERSIM Workshop, *Initial Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, University of Otago, Dunedin, New Zealand Presenters/Authors: Kletzing, C A, Kurth, W S, MacDowall, R, Torbert, R B, Hospodarsky, G R, Bounds, S R, Smith, C W, Connerney, J, Santolik, O, Thorne, R, Jordanova, V, Wygant, J, Bonnell, J W
- 2013 1st COSPAR Symposium - Planetary Systems of Our Sun and Other Stars... and the Future of Space Astronomy, *Plasma Wave Observations from the Van Allen Probes*, Bangkok, Thailand Presenters/Authors: Kletzing, Craig A
- 2013 International Association of Geomagnetism and Aeronomy (IAGA) The XIIth Scientific Assembly, *Initial Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, International Association of Geomagnetism and Aeronomy (IAGA) The XIIth Scientific Assembly, Merida, Mexico Presenters/Authors: Kletzing, Craig A., Kurth, W. S., MacDowall, R., Torbert, R. B., Hospodarsky, G. B., Bounds, S. R., Smith, C. W., Connemey, J., Santolik, O., Thome, R., Jordanova, V., Agnell, M., Wygant, J., Bonnell, J. W., Spence, H., Baker, D. N., Fennel, J., Reeves, G., Blake, B., Goldstein, J., LI, W.
- 2013 Japan Geoscience Union Meeting, *Initial Results From The Electric and Magnetic Field Instrument Suite and Integrated Science on the Van Allen Probes*, Tokyo, Japan Presenters/Authors: Kletzing, C. A., Kurth, W., MacDowall, R., Torbert, R., Hospodarsky, G., Bounds, S. R., Smith, C., Connemey, J., Santolik, O., Thome, R.,

- Jordanova, V., Wygant, J., Bonnell, J.
- 2013 European Geosciences Union General Assembly, *The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Vienna, Austria Presenters/Authors: Kletzing, C. A., Kurth, W. S., MacDowall, R., Torbert, R. B., Hospodarsky, G. B., Bounds, S. R., Smith, C. W., Connerney, J., Santolik, O., Thorne, R., Jordanova, V., Agnell, M., Wygant, J., Bonnell, J. W., Spence, H., Baker, D. N., Fennel, J., Reeves, G., Blake, B., Goldstein, J., LI, W.
- 2012 Fall AGU Meeting, *The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Radiation Belt Storm Probes*, San Francisco, California, United States Presenters/Authors: KLETZING, C. A., Kurth, W. S., MacDowall, R., Torbert, R. B., Hospodarsky, G. R., Bounds, S. R., Smith, C. W., Connerney, J., Santolik, O., Thorne, R., Jordanova, V., Wygant, J., Bonnell, J. W.
- 2012 COSPAR Scientific Assembly, *Waves in Earth's Radiation Belts: Determination of Characteristics from Past and Upcoming Missions*, Mysore, India Presenters/Authors: Kletzing, C. A.
- 2012 5th IsraDynamics Conference - Dynamical Processes in Space and Astrophysics1 Plasmas, *Radiation Belt Waves: Wave Property Determination from Past and Upcoming Missions*, Jerusalem, Israel Presenters/Authors: Kletzing, C. A.
- 2012 International Conference on Radiation Belts and Space Weather, *The Electric and Magnetic Field Instrument Suite and Integrated Science on the Radiation Belt Storm Probes*, Daejeon, Korea Presenters/Authors: Kletzing, C. A.
- 2011 URSI General Assembly and Scientific Symposium, *Forthcoming Measurements of Plasma Waves by the EMFISIS Investigation on the RBSP Spacecraft*, IEEE, Istanbul, Turkey Presenters/Authors: Kletzing, Craig
- 2011 AGU Chapman Conference on the Dynamics of the Earth's Radiation Belts and Inner Magnetosphere,, *Electric and Magnetic Field Measurements on the RBSP Mission*, American Geophysical Union, St. Johns, Canada Presenters/Authors: Kletzing, C. A., Wygant, J., Bonnell, J., Kurth, W, MacDowall, R., Torbert, R. B.
- 2011 11th International Workshop on the Interrelationship between Plasma Experiments in the Laboratory and Space, *Observation of Langmuir Wave-Electron Phase Bunching*, Whistler, Canada Presenters/Authors: Kletzing, C. A., Bounds, S. R., Kaeppler, S., LaBelle, J., Dombrowski, M.
- 2010 2010 Asia-Pacific Radio Science Conference, *Observation of Langmuir Wave-Electron Phase Bunching*, URSI, Toyama, Japan Presenters/Authors: Kletzing, C. A., Bounds, S. R., Kaeppler, S., LaBelle, J., Dombrowski, M.
- 2010 Meeting of the Americas, *Observation of Langmuir Wave-Electron Phase Bunching*, American Geophysical Union, Iquacu Falls, Brazil Presenters/Authors: Kletzing, C. A., Bounds, S. R., Kaeppler, S., LaBelle, J., Dombrowski, M.

International - Oral

- 2022 ESA-PAC Rocket and Balloon Symposium, *The Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites (TRACERS)*, Biarritz, France, Presenter: Kletzing, Craig
- 2016 American Geophysical Union Fall Meeting, *Whistler Wave Energy Flow in the Plasmasphere: A Source for Heating?*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig
- 2015 Asia Oceania Geosciences Society (AOGS) 12th Annual Meeting, *Statistics of Wave Properties of Plasmaspheric Hiss*, Singapore, Singapore Presenters/Authors: Kletzing, Craig
- 2014 American Geophysical Union Fall Meeting, *Evidence for Significant Local Generation of Plasmaspheric Hiss*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig
- 2013 Asia Oceania Geosciences Society (AOGS) 10th Annual Meeting, *Initial Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Asia Oceania Geosciences Society, Brisbane, Australia Presenters/Authors: Kletzing, Craig
- 2011 International Symposium on Recent Observations and Simulations of the Sun-Earth

- System II, *Stormy (Space)Weather: The Radiation Belt Storm Probes Mission*, Borovets, Bulgaria Presenters/Authors: Kletzing, Craig
- 2011 XXV IUGG General Assembly, *Observation of LangmuirWave Electron Phase Bunching*, IUGG, Melbourne, Australia Presenters/Authors: Kletzing, Craig
- 2011 XXV IUGG General Assembly, *Waves in the Earths Radiation Belt: The Electric and Magnetic Field Instrument Suite with Integrated Science on the Radiation Belt Storm Probes.*, IUGG, Melbourne, Australia Presenters/Authors: Kletzing, Craig
- 2008 American Geophysical Union Fall Meeting, *Determination of the Envelope Distribution for Langmuir Waves in the Topside Ionosphere.*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig
- 2005 American Geophysical Union Fall Meeting, *Alfvén Wave Magnetosphere- Ionosphere Coupling in the Auroral Zone*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig

International - Poster

- 2011 American Geophysical Union Fall Meeting, *Non-linear Wave Evolution: Observation of Electron Phase Bunching in Auroral Langmuir Waves*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig
- 2010 American Geophysical Union Fall Meeting, *Observation of Electron Phase Bunching in Auroral Langmuir Waves*, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig
- 2008 37th COSPAR Scientific Assembly, *The Electric and Magnetic Field Instrument Suite with Integrated Science (EMFISIS) on the Radiation Belt Storm Probes.*, COSPAR, Montreal, Canada Presenters/Authors: Kletzing, Craig
- 2004 American Geophysical Union Fall Meeting, *Observation of the Reactive Component of Langmuir Wave-Electron Phase Bunching*, American Geophysical Union, San Francisco, California Presenters/Authors: Kletzing, Craig

International - Seminar

- 2015 *Statistics of Whistler Wave Energy Flow in the Plasmasphere*, Kyoto University, Kyoto, Japan Presenters/Authors: Kletzing, Craig
- 2014 *Recent Results from the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Kyoto University, Kyoto, Japan Presenters/Authors: Kletzing, Craig

National - Colloquium

- 2016 *Stormy (Space) Weather: An EMFISIS on the Radiation Belt StormProbes*, The College of New Jersey, Ewing Township, New Jersey, United States Presenters/Authors: Kletzing, Craig
- 2021 *The Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites (TRACERS)Mission*, West Virginia University, Morgantown, WV.

National - Guest Speaker

- 2021 Pinceton Seminar, *TRACERS: Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites*, Princeton, Princeton, New Jersey, United States Presenters/Authors: Kletzing, C. A.
- 2021 UCLA Seminar, *TRACERS: Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites*, UCLA, Los Angeles, California, United States Presenters/Authors: Kletzing, C. A.

National - Invited Lecture

- 2021 2021 Geospace Environment Modeling Workshop, *The Tandem Reconnection And Cusp Electrodynamics Reconnaissance Satellites Mission*, Virtual, Presenting Author: C. A. Kletzing
- 2015 Measurement Techniques in Solar and Space Physics, *A Wave-Particle Correlator with Good Phase Resolution*, Boulder, Colorado, United States Presenters/Authors: Kletzing, Craig
- 2015 Inner Magnetosphere Coupling III (IMC III), *Statistics of Plasmaspheric Hiss Poynting*

- Flux Direction in the Inner Magnetosphere*, UCLA, Westwood Village, California, United States Presenters/Authors: Kletzing, Craig
- 2014 USNCURSI National Radio Science Meeting, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, Boulder, Colorado, United States Presenters/Authors: Kletzing, C A
- 2014 USNCURSI National Radio Science Meeting, *Recent Results From The Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) on the Van Allen Probes*, URSI, Boulder, Colorado, United States Presenters/Authors: Kletzing, Craig
- 2013 Tutorial Lecture at the Global Electrodynamics Modeling Workshop, *Waves in the Radiation Belts: Overview and Initial Results from the Van Allen Probes*, Snowmass, Colorado, United States Presenters/Authors: Kletzing, C. A.
- 2013 Tutorial Lecture at the Global Electrodynamics Modeling Workshop, *Waves in the Radiation Belts: Overview and Initial Results from the Van Allen Probes*, NSF, Snowmass, Colorado, United States Presenters/Authors: Kletzing, Craig
- 2010 2010 Global Electrodynamics Modeling Workshop, Snowmass, CO, June, 2010., *The Electric and Magnetic Field Instrument Suite with Integrated Science (EMFISIS) on the Radiation Belt Storm Probes*, NSF, Boulder, Colorado, United States Presenters/Authors: Kletzing, Craig

National - Poster

- 2015 American Geophysical Union Fall Meeting, American Geophysical Union, San Francisco, California, United States Presenters/Authors: Kletzing, Craig

National - Workshop

- 2022 GEM Workshop, *Tandem Reconnection And Cusp Electrodynamics Reconnaissance Satellites (TRACERS)*, Honolulu, HI, USA, Presenter: Kletzing, Craig
- 2017 Bringing Space Down To Earth, *Radiation Belt Wave Observations on the Van Allen Probes and Opportunities for Lab Experiments*, UCLA, Los Angeles, California, United States Presenters/Authors: Kletzing, Craig

Regional - Colloquium

- 2019 *Stormy (Space) Weather: An EMFISIS on the Radiation Belt Storm Probes*, Illinois State University, Normal,, Normal, Illinois, United States Presenters/Authors: Kletzing, Craig

State - Invited Lecture

- 2022 UI Presidential Lecture: *Space Science at the University of Iowa*, February 27, 2022, Iowa City, C. A. Kletzing – Author/Presenter
- 2011 Iowa Academy of Sciences Annual Meeting, *Stormy (Space) Weather: An EMFISIS on the Radiation Belt Storm Probes*, Iowa Academy of Sciences, Waverly, Iowa, United States Presenters/Authors: Kletzing, Craig

State - Keynote/Plenary Address

- 2011 Iowa Chapter of the American Association of Physics Teachers Fall Meeting, *tormy (Space) Weather: An EMFISIS on the Radiation Belt Storm Probes*, Des Moines, Iowa, United States

SERVICE**Profession**

- 2019,2020 Asia Oceana Geophysical Society, Special Session: Seven Years of Van Allen Probes and Two Years of Arase: New and Recent Results on Radiation Belt and Inner Magnetosphere Physics, Organizer
- 2018 H-TIIDeS Review Panel, Reviewer
- 2014 - 2017 NASA, Sounding Rocket Working Group, Member, national advisory panel on the NASA sounding rocket program
- 2016 - 2017 Asia Oceana Geophysical Society, Special Session: New and Recent Results on Radiation Belt

and Inner Magnetosphere Physics, Co-Organizer
 2017 NASA, MMS Guest Investigator Review Panel, Member
 2015 - 2016 International Symposium on Recent Observations and Simulations of the Sun-Earth System (ISROSES III), Scientific Organizing Committee, Member
 2015 NASA, Postdoc Review Mail-in Reviewer, Reviewer, Grant Proposals
 2015 NASA, Heliophysics Review Panel, Chair
 2015 Asia Oceana Geophysical Society, Convener for Session ST15-19 Understanding the Dynamics of the Earth's Radiation Belts and Inner Magnetosphere, Co-Organizer
 2015 NSF, GEM Review Panel, Member
 2013 - 2014 Geospace revisited: a Cluster/MAARBLE/Van Allen Probes Conference, Scientific Organizing Committee, Member
 2013 NASA, Van Allen Probes Guest Investigator Program, Expert Panel
 2012 National Research Council Report, Reviewer
 2012 NSF GEM, Program Review, Expert Panel
 2012 University of Colorado Boulder, Faculty Tenure, Reviewer, External Letter Review
 2012 West Virginia University, Faculty Tenure, Reviewer, External Letter Review
 2011 NASA Geospace SMEX Review Committee, Chair
 2010 - 2011 Scientific Organizing Committee for the International Symposium on Recent Observations and Simulations of the Sun-Earth System II, Member
 2010 - 2011 Scientific Program Committee for AGU Chapman Conference on Dynamics of the Earth's Radiation Belts, Member
 2010 Fullbright National Screen Committee, Reviewer, Grant Proposals
 2009 AGU Special Session on "Advances in Cusp and Polar Cap Dynamics", Organizer

Department

2020 - 2022 CCOM – Department Executive Committee, Member
 2017 - 2019 Department Educational Operations Committee, Member
 2018 Probationary Faculty Review - A. Jaynes, Reviewer
 2015 - 2017 Department Executive Committee, Member
 2016 - 2017 Space Science Faculty Search Committee, Member
 2013 - 2015 Department Admissions Committee, Member
 2015 Probationary Faculty Review - J. Halekas
 2013 - 2014 Space Physics Faculty Search Committee, Chair
 2013 Promotion and Tenure Committee for Professor Randall McEntaffer, Member
 2011 - 2013 Department Executive Committee, Member
 2009 Promotion and Tenure Committee for Prof. Cornelia Lang, Member
 2007 - 2008 Department Search Committee for Plasma Theorist, Member
 2001 - 2008 Department Executive Committee, Member
 2007 Promotion and Tenure Committee for Prof. Phillip Kaaret, Member
 2001 - 2006 Associate Chair of Department

College

2018 CLAS Dean Search Committee, Member
 2012 - 2015 Named Chairs Committee, Member
 2008 Collegiate Scholar Award for Graduating Seniors, Reviewer
 2006 - 2008 CLAS - Executive Committee, Member
 2003 - 2006 CLAS Educational Policy Committee, Member

University

2012 - Present Division of Sponsored Programs Faculty Advisory Committee, Member
 2016 - 2020 Committee on Access and Use of Faculty Data (AUFD), Member
 2017 - 2019 Faculty Senate, Member
 2016 - 2018 Faculty-Staff Budget Committee, Member
 2017 Talented Student Recruitment Panel, Member, Panel discussion of opportunities for talented students at UI. It was put together by Dan Reed and chaired by Rich Hichwa.
 2013 Faculty-Staff Budget Committee, Co-Chair

2013	Provost's Energy Task Force, Member
2010 - 2012	Faculty-Staff Budget Committee, Member
2010 - 2011	Provost Search Committee, Member
2005 - 2011	Faculty Senate, Member
2008 - 2010	Faculty Development Advisory Council, Member
2008 - 2009	Search Committee for Director of the Center for Teaching, Member
2008	CLAS Decanal Review Committee, Member
2019	Probationary Faculty Review - A. Jaynes, Reviewer

Community

2021	Midwest Pediatric Cardiology Meeting, Banquet Speaker, The TRACERS Mission
2017	Lyons Club, Invited Lecture, Gave a talk: Sounds of Space: The Earth Sings
2016	Easter Iowa Teachers group, Guest Speaker, I did an outreach event to eastern Iowa high school teach entitled, "The Radiation Belts and the Van Allen Probes Mission "
2016	The University of Iowa, Hawkeyes in Space for the Mobile Museum, Member, This committee worked to put together the "Hawkeyes in Space" exhibit for the Mobile Museum that toured Iowa over the late Spring and Summer.
2016	The UI Pentacrest Museum, Guest Speaker, I gave a public lecture entitled: "Hawkeyes in Space: Space Research at the University of Iowa"
2014	Joint Iowa-Illinois AAPT Meeting, The Radiation Belts and the Van Allen Probes Mission, Guest Speaker
2013	Harry Nelson Lecture in Astronomy, Stormy (Space) Weather: An EMFISIS on the Van Allen Probes, Guest Speaker
2013	Astronomy Day, Guest Speaker
2013	Physics Department, Demo Show, Guest Speaker
2012	Kennedy Space Center Visitor's Center, Guest Speaker
2012	Cafe Scientifique, Guest Speaker
2012	UI Alumni Group, Guest Speaker
2012	Physics Department, Demo Show, Guest Speaker
2011	UI LEAP Program presentation: The Aurora: Nature's Light Show in the Sky, Invited Lecture
2010	Public Lecture at Park Centre Retirement Community, Invited Lecture

Media Contributions

2017	Magazine, Iowa Alumni Magazine, National Piece about our TRACERS Small Explorer selection and Phase A study. On pg 11.
2017	Newspaper, Washinton Post, National Article about the sounds of space. I was interviewed for this piece.