Dr. Bea Gallardo-Lacourt
Researcher
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Education

Ph.D. Atmospheric and Oceanic Sciences, 2016 – Atmospheric and Oceanic Sciences Department, UCLA
Advisors: Professor Larry R. Lyons & Dr. Yukitoshi Nishimura

M. Sc., Atmospheric and Oceanic Sciences, UCLA, USA

B. Eng., Engineering Physics, University of Santiago, Chile

B. Sc., Applied Physics, University of Santiago, Santiago, Chile

Awards and Fellowships

2021: NASA Science and Exploration Directorate—Diversity, Equity, and Inclusion Award as a member of the Equity Task Force and NGAPS DEI subcommittee

2020: Editor's citation for Excellence in Refereeing, Journal of Geophysical Research

2019: NASA Postdoctoral Program Fellowship

2019: NASA Group Achievement Award—STEVE team

2019: NASA Robert H. Goddard Exceptional Achievement for Science Award—STEVE Team

2016: UCLA Bosart Award: For Unselfish Service to Fellow Students

2015-2016: UCLA Dissertation Year Fellowship

2015: UCLA Morris Neiburger Award: For Excellence in Graduate Teaching

2014: Outstanding Student Paper Award, AGU Fall Meeting 2014

2014: First place student Poster Award on Ionosphere-Thermosphere, CEDAR workshop

2010: AGU Fall Meeting Student travel grant (Grad Student)

2009: AGU Fall Meeting Student travel grant (Undergraduate)

Experimental Experience

Magnetometer Installation

Installing two magnetometers of the SAMBA Project (South American Meridional B-field Array) in Antarctica bases Escudero and Bernardo O'Higgins. January 2013

Employment

Researcher	Department of Physics, Catholic University of America & NASA Goddard Space Flight	April 2022
Postdoctoral Researcher	NASA Postdoctoral Program Fellow. NASA Goddard Space Flight Center & USRA	May 2019 – April 2022
Postdoctoral Scholar	Department of Physics and Astronomy University of Calgary	March 2017 – April 2019
Postdoctoral Scholar	Department of Atmospheric and Oceanic Sciences UCLA	August 2016 – March 2017
Teaching Assistant	Department of Atmospheric and Oceanic Sciences UCLA	September 2014 –March 2014
Graduate Student Researcher	Department of Atmospheric and Oceanic Sciences UCLA	January 2011 – June 2016

Community and Volunteer Activities

June 2023 - Present	Co-lead of the International Space Science Institute Working Group ARCTICS (Auroral Research Coordination: Towards Internationalized Citizen Science)
January 2023 - Present	Chair of the AGU Space Physics and Aeronomy Early Career Leadership Advisory Committee
October 2022 - Present	**NASA's Geospace Dynamic Constellation (GDC) Ground-Based Coordination Lead**
September 2022 - Present	Secretary of the National Society of Hispanic Physicists
June 2022 - Present	Member of AGU International Award Committee
January 2022 - Present	Chair of the NSF funded Geospace Environment Modeling (GEM) Focus Group: The Nightside Transition Region

October 2021 - Present	Organizer of the NSF funded STEVE (Strong Thermal Emission Velocity Enhancement) Workshops
April 2021	NSF proposal reviewer
June 2020 - Present	**Magnetosphere and Aeronomy Editor for the American Geophysical Union (AGU) Books**
June 2020	NASA Review Panel Participant
March 2020-Present	Associate Investigator of the PUNCH (Polarimeter to UNify the Corona and Heliosphere) NASA Mission
October 2019	NASA Review Panel Participant
January 2018 – Dec 2021	Member of the AGU Global Engagement Committee
August 2018 - Present	Reviewer for Geophysical Research Letters (GRL)
March 2015 - Present	Reviewer for Journal of Geophysical Research (JGR)
April 2017 – April 2019	Volunteer for Calgary Reads. Initiative which focuses on creating positive changes in literacy outcomes for children
June 2017	Poster Judge, Cedar Workshop 2017
June 2015 – June 2016	Vice President of Atmospheric and Oceanic Sciences Department student association (XEP), University of California, Los Angeles
August 2015 – March 2017	Member, Organization for Cultural Diversity in Science - UCLA The Organization for Cultural Diversity in Science strives to create a close-knit community among the graduate students in the sciences, with an emphasis in cultural diversity through the underrepresented groups at UCLA

Memberships

American Geophysical Union, 2008 – Present
Japan Geoscience Union, 2018 – Present
American Physical Society, 2021 – Present
National Society of Hispanic Physicists, 2022 – Present
European Geosciences Union, 2023 – Present

Selected Press Coverage

- "How to find STEVE, the purple streak that looks like an aurora but isn't"—Washington Post, 2023
- "Scientists Solve The Mystery of STEVE, And Find It's So Much More Than An Aurora"—Forbes Magazine, 2019
- "Steve the odd 'aurora' revealed to be two sky shows in one"—National Geographic, 2019
- "It's official: The Strange, Aurora-Like STEVE Is a Completely Unique Celestial Phenomenon"—Space, 2019
- "The aurora named STEVE is not an aurora"—Nature, 2018
- "The bright purple ribbon—named STEVE—is an entirely new celestial phenomenon"—Science Magazine, 2018
- "Scientists Are Puzzled By Mysterious Lights In The Sky. They Call Them STEVE"—NPR, 2018
- "STEVE the Aurora Isn't An Aurora After All"—Discover Magazine, 2018
- "STEVE the Purple Beam of Light Is Not An Aurora After All"—Smithsonian Magazine
- "New Kind of Aurora Is Not An Aurora At All"—AGU Newsroom, 2018

Diversity, Equity, and Inclusion activities

- Panelist at the Student Career Panel—NSF GEM Workshop, June 2022
- Panelist at Diversity, Equity, and Inclusion from an International AGU Perspective: A Panel Discussion of a Global Issue from a non-US World View, December 2020
- Member of NASA Goddard—Heliophysics Division Equity Task Force, Since September 2020
- How did I get here? Invited talk at STEM para Todas, a workshop to motivate young Peruvian girls into STEM careers, Virtual Presentation, February 2020

Peer Reviewed Publications

1. **Gallardo-Lacourt, B.**, Nishimura, Y., Kepko, L., D. Knudsen, J. Burchill, E. Spanwick, and E. Donovan. Quiet time STEVE observations. In preparation to be submitted to Geophysical Research Letters.
2. **Gallardo-Lacourt, B.**, Wing, S., Kepko, L., Gillies, D. M., Spanswick, E. L., Roy, E. A., & Donovan, E. F. (2022). Polar cap boundary identification using redline optical data and DMSP satellite particle data. Journal of Geophysical Research: Space Physics, 127, e2021JA030148. https://doi.org/10.1029/2021JA030148
3. **Gallardo-Lacourt, B.**, Frey, H.U. & **Martinis, C. Proton** Aurora and Optical Emissions in the Subauroral Region. Space Sci Rev 217, 10 (2021). https://doi.org/10.1007/s11214-020-00776-6.
4. **Gallardo-Lacourt, B.**, G. W. Perry, W. E. Archer, and E. Donovan (2019), How did we miss this? An upper atmospheric discovery named STEVE, Eos, 100, https://doi.org/10.1029/2019EO117351.

5. **Gallardo-Lacourt, B.**, J. Liang, Y. Nishimura, E. Donovan (2018), *On the origin of STEVE: Particle precipitation or ionospheric skyglow?* Geophysical Research Letters, 45. https://doi.org/10.1029/2018GL078509 **[Featured article & GRL cover]**
6. **Gallardo-Lacourt, B.,** Nishimura, Y., Donovan, E., Gillies, D. M., Perry, G. W., Archer, W. E., et al. (2018). *A statistical analysis of STEVE*. Journal of Geophysical Research: Space Physics, 123, 9893–9905. https://doi.org/10.1029/2018JA025368
7. **Gallardo-Lacourt B.**, G. W. Perry., W. E. Archer, and E. F. Donovan (2018), *An upper atmospheric discovery in the eyes of early career scientists, Submitted to EOS*
8. **Gallardo-Lacourt, B**., Y. Nishimura, L. R. Lyons, E. V. Mishin, J. M. Ruohoniemi, E. Donovan, V. Angelopoulos, and N. Nishitani (2017), *Influence of auroral streamers on rapid evolution of ionospheric SAPS flows*, *Journal of Geophysical Research: Space Physics., 122, 12, 406-12, 420, doi: 10.1002/2017JA024198* .
9. **Gallardo-Lacourt, B**., Y. Nishimura, L. R. Lyons, J. M. Ruohoniemi, E. Donovan, V. Angelopoulos, K. A. McWilliams, and N. Nishitani (2014), *Ionospheric flow structures associated with auroral beading at substorm auroral onset*, J. Geophys. Res. Space Physics, 119, 9150-9159, doi:10.1002/2014JA020298
10. **Gallardo-Lacourt, B**., Y. Nishimura, L. R. Lyons, S. Zou, V. Angelopoulos, E. Donovan, K. A. McWilliams, J. M. Ruohoniemi, and N. Nishitani (2014), *Coordinated SuperDARN THEMIS ASI observations of mesoscale flow bursts associated with auroral streamers*, J. Geophys. Res. Space Physics, 119, doi:10.1002/2013JA019245 **[Featured article]**
11. **Gallardo-Lacourt, B.**, Y. Nishimura, L. R. Lyons, and E. Donovan (2012), *External triggering of substorms identified using modern optical versus geosynchronous particle data, Ann. Geophys.*, 30, 667-673, doi:10.5194/angeo-30-667-2012.
12. Zhang, Y., **Gallardo-Lacourt, B.**, Paxton, L., Erickson, P., Hairston, M., and Coley, W. (2023), STEVE Events with FUV Emissions, Submitted to JGR.
13. Gabrielse C., Gkioulidou M., Merkin S., Malaspina D., Turner D. L., Chen M. W., Ohtani S., Nishimura Y., Liu J., Birn J., Deng Y., Runov A., McPherron R. L., Keesee A., Lui A. T. Y., Sheng C., Hudson M., **Gallardo-Lacourt B.**, Angelopoulos V., Lyons L., Wang C.-P., Spanswick E. L., Donovan E., Kaeppler S. R., Sorathia K., Kepko L., Zou S. (2023). Mesoscale phenomena and their contribution to the global response: a focus on the magnetotail transition region and magnetosphere-ionosphere coupling. Frontiers in Astronomy and Space Sciences, 10, DOI: 10.3389/fspas.2023.1151339, https://www.frontiersin.org/articles/10.3389/fspas.2023.1151339.
14. Ledvina V., Brandt L., MacDonald E., Frissell N., Anderson J., Chen T. Y., French R. J., Di Mare F., Grover A., Battams K., Sigsbee K., **Gallardo-Lacourt B.,** Lach D., et al. (2023). Agile collaboration: Citizen science as a transdisciplinary approach to heliophysics. Frontiers in Astronomy and Space Sciences, 10, https://www.frontiersin.org/articles/10.3389/fspas.2023.1165254
15. Svaldi, V., Matsuo, T., Kilcommons, L., & Gallardo-Lacourt, B. (2023). High-latitude ionospheric electrodynamics during STEVE and non-STEVE substorm events. Journal of Geophysical Research: Space Physics, 128, e2022JA030277. https://doi.org/10.1029/2022JA030277
16. Gillies, D. M., Liang, J., **Gallardo-Lacourt, B.**, & Donovan, E. (2023). New insight into the transition from a SAR arc to STEVE. Geophysical Research Letters, 50, e2022GL101205. https://doi.org/10.1029/2022GL101205
17. Shumko, M., Chaddoc, D., **Gallardo-Lacourt, B.,** Donovan, E. F., Spanswick, E. L., Halford, A. J., Thompson, I., and Murphy, K. (2022), AuroraX, PyAuroraX, and aurora-asi-lib: a user-friendly auroral all-sky imager analysis framework. Frontiers in Astronomy and Space Sciences, Methods Article, Section Space Physics, doi: 10.3389/fspas.2022.1009450

18. Martinis, C., Griffin, I., **Gallardo-Lacourt, B.**, Wroten, J., Nishimura, Y., Baumgardner, J., & Knudsen, D. J. (2022). Rainbow of the night: First direct observation of a SAR arc evolving into STEVE. Geophysical Research Letters, 49, e2022GL098511. https://doi.org/10.1029/2022GL098511. **[Featured article & GRL cover]**
19. Nishimura, Y., Hussein, A., Erickson, P. J., **Gallardo-Lacourt, B.**, & Angelopoulos, V. (2022). Statistical study of magnetospheric conditions for SAPS and SAID. Geophysical Research Letters, 49, e2022GL098469. https://doi.org/10.1029/2022GL098469
20. Lyons L. R., **Gallardo-Lacourt B.,** Nishimura Y. (2022), Chapter 2 - Auroral structures: Revealing the importance of meso-scale M-I coupling, Cross-Scale Coupling and Energy Transfer in the Magnetosphere-Ionosphere-Thermosphere System, Elsevier, https://doi.org/10.1016/B978-0-12-821366-7.00004-4.
21. Shumko, M., **Gallardo-Lacourt, B.**, Halford, A. J., Liang, J., Blum, L. W., Donovan, E., et al. (2021). A strong correlation between relativistic electron microbursts and patchy aurora. Geophysical Research Letters, 48, e2021GL094696. https://doi.org/10.1029/2021GL094696
22. Martinis, C., Nishimura, Y., Wroten, J., Bhatt, A., Dyer, A., Baumgardner, J., & Gallardo-Lacourt, B. (2021). First simultaneous observation of STEVE and SAR arc combining data from citizen scientists, 630.0 nm all-sky images, and satellites. Geophysical Research Letters, 48, e2020GL092169.
23. Forsyth, C., Sergeev, V.A., Henderson, M.G., Nishimura, Y., and **Gallardo-Lacourt, B.** Physical Processes of Meso-Scale, Dynamic Auroral Forms. Space Sci Rev 216, 46 (2021). https://doi.org/10.1007/s11214-020-00665-y
24. Archer, W. E., St.- Maurice, J.-P., **Gallardo-Lacourt**, B., Perry, G. W., Cully, C. M., & Donovan, E. et al. (2019b). The vertical distribution of the optical emissions of a Steve and Picket Fence event. Geophysical Research Letters, 46, 10719– 10725. https://doi.org/10.1029/2019GL08447. **[Featured article & GRL cover]**
25. Archer, W. E., **Gallardo-Lacourt**, B., Perry, G. W., St.-Maurice, J.-P., Buchert, S. C., & Donovan, E. F. (2019a). Steve: The optical signature of intense subauroral ion drifts. Geophysical Research Letters, 46, 6279– 6286. https://doi.org/10.1029/2019GL082687
26. Gillies, D. M., Donovan, E., Hampton, D., Liang, J., Connors, M., Nishimura, Y., **Gallardo-Lacourt, B.,** and Spanswick, E. (2019). First observations from the TREx Spectrograph: The optical spectrum of STEVE and the Picket Fence phenomena. Geophysical Research Letters, 46, 7207– 7213. https://doi.org/10.1029/2019GL083272
27. Nishimura, Y., **Gallardo-Lacourt, B.**, Zou, Y., Mishin, E., Knudsen, D. J., Donovan, E. F., et al. (2019). Magnetospheric signatures of STEVE: Implications for the magnetospheric energy source and interhemispheric conjugacy. Geophysical Research Letters, 46, 5637– 5644. https://doi.org/10.1029/2019GL082460. **[Featured article]**
28. Gabrielse, C., Pinto, V., Nishimura, Y., Lyons, L., **Gallardo-Lacourt**, B., & Deng, Y. (2019). Storm time mesoscale plasma flows in the nightside high-latitude ionosphere: A statistical survey of characteristics. Geophysical Research Letters, 46, 4079– 4088. https://doi.org/10.1029/2018GL081539.
29. Liang, J., E. Donovan, M. Connors, D. M. Gillies, J.-P. St.-Maurice, B. Jackel, **B. Gallardo-Lacourt**, E. L. Spanswick, and X. Chu (2019), Optical spectra and emission altitudes of double-layer STEVE: A case study, Submitted to GRL.
30. Chu, X., Malaspina, D., **Gallardo-Lacourt, B.**, Liang, J., Andersson, L., Ma, Q., et al (2019). Identifying STEVE's magnetospheric driver using conjugate observations in the

magnetosphere and on the ground. Geophysical Research Letters, 46. https://doi.org/10.1029/2019GL082789

31. Gabrielse, C., Y. Nishimura, L. R. Lyons, **B. Gallardo-Lacourt**, Y. Deng, and E. Donovan (2018), *Statistical properties of meso-scale plasma flows in the nightside high-latitude ionosphere*, Journal of Geophysical Research: Space Physics, 123, 6798–6820. https://doi.org/10.1029/2018JA025440.
32. E. A. MacDonald, E. Donovan, Y. Nishimura, D. M. Gillies, **B. Gallardo-Lacourt**, W. Archer, E. L. Spanswick, M. Connors, N. Case, B. Jackel, D. Knudsen, N. Bourassa, M. Heavner, B. Kosar, C. Ratzlaff, I. Schofield (2018), *New Science in Plain Sight: Citizen Scientists Lead to Discovery of Optical Structure in the Upper Atmosphere*, Science Advances, vol.4, no. 3, eaaq0030, DOI: 10.1126/sciadv.aaq0030.
33. Liu, J., L. R. Lyons, W. E. Archer, **B. Gallardo-Lacourt**, Y. Nishimura, Y. Zou, C. Gabrielse, and J. M. Weygand (2018), *Flow shears at the poleward boundary of omega bands observed during conjuctions of Swarm and THEMIS ASI*, Geophysical Research Letters, 45, 1218-1227, doi: 10.1002/2017GL076485.
34. Lyons, L. R., Y. Zou, Y. Nishimura, **B. Gallardo-Lacourt**, V. Angelopoulos, and E. Donovan (2018), *Stormtime substorm onsets: occurrence and flow channel triggering*, Earth, Planets and Space, 70: 81, doi: 10.1186/s40623-018-0857-x.
35. L. R. Lyons, **B. Gallardo-Lacourt**, Y. Zou, Y. Nishimura, P. Anderson, V. Angelopoulos, E. F. Donovan, J. M. Ruohoniemi, E. Mitchells, L. J. Paxton, and N. Nishitani (2017), *Driving of Strong Nightside Reconnection and Geomagnetic Activity by Polar Cap Flows: Applications to CME Shocks and Possible Other Situations, Submitted to Journal of Atmospheric and Solar-Terrestrial Physics.*
36. L. R. Lyons, **B. Gallardo-Lacourt**, S. Zou, J. M. Weygan, Y. Nishimura, W. Li, M Gkioulidou, V. Angelopoulos, E. F. Donovan, J. M. Ruohoniemi, B. J. Anderson, S. G. Shepherd, and N. Nishitani (2016), *2013 March 17 Storm: Synergy of Observations Related to Electric Field Modes and their Ionospheric and Magnetospheric Effects*, J. Geophys. Res. Space Physics, 121,10,880-10,897, doi:10.1002/2016JA023237
37. Lyons L. R., Nishimura Y., **Gallardo-Lacourt B.**, Zou Y., Donovan E. F., Mende S., Angelopoulos V., Ruohoniemi J. M., McWilliams K. A., Hampton D. L., Nicolls M. J. (2015). *Dynamics Related to Plasma Sheet Flow Bursts as Revealed from the Aurora*. Auroral Dynamics and Space Weather.
38. Lyons, L. R., Nishimura Y., **Gallardo-Lacourt B.**, Nicolls M. J., Chen S., Hampton D. L., Bristow W. A., Ruohoniemi J. M., Nishitani N., Donovan E. F., and Angelopoulos V. (2015). *Azimuthal flow bursts in the Inner Plasma Sheet and possible connection with SAPS and Plasma sheet earthward flow bursts*. Journal of Geophysical Research, Space Physics. 5009-5021.
39. Lyons, L. R., Y. Nishimura, **B. Gallardo-Lacourt**, Y. Zou, E. Donovan, S. Mende, V. Angelopoulos, J. M. Ruohoniemi, and K. McWilliams (2013), *Westward traveling surges: Sliding along boundary arcs and distinction from onset arc brightening*, J. Geophys. Res. Space Physics, 118, 7643–7653, doi:10.1002/2013JA019334

Invited Presentations and Lectures

1. Gallardo-Lacourt B., D. Rowland, L. Kepko, K. Garcia-Sage, and the GDC Science Team, Exploring the Prospects for a vivid collaborative science between the GDC mission and the ground-based community, Space Weather Observations Throughout Latinoamerica, Ushuaia, Argentina, October 2023

2. **Gallardo-Lacourt B.** et al., Prospects for a Vivid Collaborative Science Between the GDC mission and the Ground-based Community, Asia and Oceania Geosciences Society, Singapore, August 2023
3. **Gallardo-Lacourt B.,** STEVE, a mysterious subauroral optical structure, Invited presentation at the American Physical Society, Mid-Atlantic Section Meeting, December 2021
4. **Gallardo-Lacourt B.,** A mysterious optical subauroral structure names STEVE, Invited Colloquium at Catholic University of America, September 2021
5. **Gallardo-Lacourt B.,** Measuring the Subauroral Region: Links to Stan Sazykyn's work, Invited talk at NSF-CEDAR workshop, June 2021
6. **Gallardo-Lacourt B.,** STEVE: A new upper atmosphere phenomenon, Invited Seminar at Dartmouth College, February 2021
7. **Gallardo-Lacourt B.,** High and midlatitude electrodynamics with an emphasis on ground-based instruments, Invited Lecture at Space Weather Class thought by Dr. Anna DeJong, Catholic University of America, November 2020
8. **Gallardo-Lacourt B.,** An overview of Space Physics books in the last 60 years and current research on MI coupling, Invited Seminar at Rice University, November 2020
9. **Gallardo-Lacourt, B.,** S. Wing, L. Kepko, D.M. Gillies, E. Spanswick, E. Donovan, Tracking auroral and solar structures using the Optical Flow techniques & automatic identification of the Polar Cap Boundary, Invited Seminar at Rice University, November 2020
10. **Gallardo-Lacourt, B.,** L. Kepko, D. M. Gillies, N. Alzate, E. Spanswick, N. Viall, C. DeForest, Optical flow technique applied to the aurora and STEREO data, PUNCH Science Meeting, June 2020
11. **Gallardo-Lacourt, B.**, Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick. STEVE, the mysterious subauroral optical phenomenon, Invited Talk, Space Weather Workshop, Boulder, USA, April 2020—Suspended due to Covid-19
12. **Gallardo-Lacourt, B.**, Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick. *What do we know about STEVE so far? Invited Seminar, Boston University*, Boston, USA, October 2019
13. **Gallardo-Lacourt, B.**, and Archer W. E., *The Mysterious STEVE*, Invited Lecture, Royal Astronomical Society of Canada, Calgary, AB, Canada, April 2019.
14. **Gallardo-Lacourt, B.**, Donovan E., Y. Nishimura, J. Liang, M. Gillies, W. E. Archer, G. W. Perry, and E. L. Spanswick, *STEVE*, SIMLE workshop, Banff, AB, Canada, November 2018.
15. **Gallardo-Lacourt, B.**, D. M. Gillies, E. L. Spanswick, E. Roy, E. Donovan, D. Guo, and A. Ridley, *Polar Cap Boundary Identification Using Redline Imaging Data*, Smile Workshop, Banff, AB, Canada, November 2018.
16. **Gallardo-Lacourt, B.**, Y. Nishimura, E. Donovan, L. Lyons, D. M. Gillies, W. E. Archer, G. W. Perry, E. L. Spanswick, J. M. Ruohoniemi, Mesoscale Structures in the Auroral and Subauroral Regions, International Space Science Institute (ISSI) Workshop, Bern, Switzerland, August 2018.
17. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick, *STEVE, the mysterious subauroral feature*, Canadian Association of Physicists, Halifax, NS, June 2018
18. **Gallardo-Lacourt B.**, Y. Nishimura, E. Donovan, L. Lyons, G. Perry, W. Archer, J. Liang, D. M. Gillies, E. Spanswick, and J. M. Ruohoniemi, *Properties of Mesoscale Structures in the Auroral and Subauroral regions*, International Space Science Institute (ISSI) Workshop, Bern, Switzerland, August 2018

19. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick, *STEVE, the mysterious subauroral feature*, Canadian Association of Physicists, Halifax, NS, June 2018
20. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick, *The knowns and unknowns of STEVE*, CONNEX workshop, Banff, AB, May 2018
21. **Gallardo-**Lacourt B., Y. Nishimura, L. Lyons, E. Donovan, J. M. Ruohoniemi, G. W. Perry, W. E. Archer, J. Liang, D. M. Gillies, E Spanswick, E. MacDonald, and D Knudsen, *An analysis of optical structures: From the Polar Cap Boundary to the Subauroral Region*, NASA Teleconference, Greenbelt, MD, March 2018
22. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick, *A new subauroral phenomenon called STEVE*, The Magnetosphere: New Tools, New Thinking, New Results, Puerto Varas, Chile, November 2017
23. **Gallardo-Lacourt, B.**, W. A. Archer, and J. Brown, *Effective Presentations: Communicating efficiently with your scientific peers*, CEDAR Workshop, ***Invited Tutorial***, Keystone, CO, June 2017
24. **Gallardo-Lacourt B.**, *Ionospheric Geography: Coupling, Energetics and Dynamics of Atmospheric Regions*, GEM-CEDAR workshop, ***Invited tutorial***, Santa Fe, NM, June 2016
25. **Gallardo-Lacourt B.**, Y. Nishimura, L. Lyons, Y. Zou, V. Angelopoulos, E. Donovan, K. McWilliams, J. M. Rouhoniemi, and N. Nishitani, *SuperDARN observations of structured flows associated with substorm onset beads*, Mechanics of the Magnetospheric System and effects in the Polar Regions, Patagonia, Chile, Noviembre 2013

Selected Outreach Presentations

1. Gallardo-Lacourt, B., NASA in Spanish, Spanish interviews on the Total lunar eclipse 2022.
2. **Gallardo-Lacourt, B.,** Y. Collado-Vega, and M.-J. Viñas, NASA in Spanish, Live Coverage of the South American Eclipse, December 14, 2020
3. **Gallardo-Lacourt, B.,** Basic concepts of Space Physics and the Aurora, Primary School Science Fair, Chile, November 2020
4. **Gallardo-Lacourt, B.,** The Aurora, Five-minutes thesis webinar on Space Weather, NOAA Space Weather Prediction Center, August 2020

Selected Presentations

1. Gallardo-Lacourt, B., S. Wing, L. Kepko, D.M. Gillies, E.L. Spanswick, E. Roy, and E. Donovan (2021), Polar Cap Boundary Identification Using Redline Optical Data and DMSP Satellite Particle Data, AGU Fall Meeting, New Orleans, Louisiana, December 2021
2. Gallardo-Lacourt, B., L.V. Goodwin, L. Kepko, E. Spanswick, and E. Donovan, Analyzing Plasma Convection Using Optical Flow Technique: From the Aurora to the Solar Wind, AGU Fall Meeting, New Orleans, Louisiana, December 2021

3. **Gallardo-Lacourt, B.**, J. Liang, Y. Nishimura, E. F. Donovan, D. M. Gillies, G. W. Perry, W. E. Archer, O. A. Nava, and E. L. Spanswick, On the Origin and geomagnetic conditions of STEVE's formation, AGU Fall Meeting, Washington D.C., December 2018.
4. **Gallardo-Lacourt B.**, E. Spanswick, D. M. Gillies, E. Roy, G. Guo, E. Donovan, and A. Ridley, *Automatic Polar Cap Boundary identification using redline all-sky imagers,* CEDAR Workshop, Santa Fe, NM, June 2018
5. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, and E. Spanswick, O. Nava, and B. Kosar, *STEVE: An optical structure in the subauroral region,* CEDAR Workshop, Santa Fe, NM, June 2018
6. **Gallardo-Lacourt B.**, E. Spanswick, D. M. Gillies, E. Roy, G. Guo, E. Donovan, and A. Ridley, *Polar Cap Boundary identification using redline all-sky imagers,* GEM Workshop, Santa Fe, NM, June 2018
7. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, E. Spanswick, O. Nava, and B. Kosar, *STEVE: An optical structure in the subsuroral region. Location and Geomagnetic conditions during its formation,* GEM Workshop, Santa Fe, NM, June 2018
8. **Gallardo-Lacourt B.**, E. Donovan, Y. Nishimura, G. Perry, W. Archer, J. Liang, D. M. Gillies, E. Spanswick, *On the location of STEVE, the mysterious Subauroral feature*, AGU Fall Meeting, New Orleans, LA, December 2017
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