

SCOTT E. PALO
VICTOR CHARLES SHELKE ENDOWED PROFESSOR
ANN AND HJ SMEAD DEPARTMENT OF AEROSPACE ENGINEERING SCIENCES
UNIVERSITY OF COLORADO BOULDER

EDUCATION

PH.D., UNIVERSITY OF COLORADO, ELECTRICAL ENGINEERING, 1994

Dissertation Title: *Analysis of the semiannual oscillation and the quasi-two-day wave in the mesosphere and lower-thermosphere using a spectral model and data collected with the Christmas Island radar systems.*

Thesis Advisor: Susan K. Avery

M.S., UNIVERSITY OF COLORADO, ELECTRICAL ENGINEERING, 1990

B.S., CLARKSON UNIVERSITY, ELECTRICAL AND COMPUTER ENGINEERING, 1987

RESEARCH AND ACADEMIC EXPERIENCE

UNIVERSITY OF COLORADO, BOULDER CO

07/14-Present	Endowed Professor, Ann and HJ Smead Department of Aerospace Engineering Sciences
8/21-Present	Associate Director, SpectrumX an NSF Spectrum Innovation Center
12/12-Present	Affiliate Faculty, Atmospheric and Oceanic Sciences Department
10/07-Present	Courtesy Appointment, Electrical, Computer and Energy Engineering Department
07/17-06/18	Faculty Director for Aerospace and Defense
07/14-06/17	Associate Dean for Research, College of Engineering and Applied Science
05/13-6/14	Professor, Department of Aerospace Engineering Sciences
11/11-06/14	Associate Chair for Undergraduate Studies, Aerospace Engineering Sciences
08/08-05/13	Associate Professor, Department of Aerospace Engineering Sciences
08/01-08/08	Assistant Professor, Department of Aerospace Engineering Sciences
04/99-08/01	Assistant Research Professor, Joint appointment with Aerospace Engineering Sciences and Electrical and Computer Engineering
01/97-04/99	Research Associate, Aerospace Engineering Sciences

NATIONAL CENTER FOR ATMOSPHERIC RESEARCH, BOULDER CO

01/95-01/97 Postdoctoral Research Fellow, High Altitude Observatory

UNIVERSITY OF COLORADO, BOULDER CO

05/88-12/94 Research Assistant, Electrical and Computer Engineering

BUSINESS EXPERIENCE

BLUE CUBED LLC, BOULDER CO

05/18-Present CEO and Co-Founder

DELTA PINNACLE CONSULTING LLC, BOULDER CO

03/18-Present CEO and Founder

BLUE CANYON TECHNOLOGIES (BCT), BOULDER CO

09/10-12/20 RF and systems technical consultant

AWARDS AND HONORS

Fellow, American Institute of Aeronautics and Astronautics (AIAA), 2023

For pioneering leadership in the conception, design, implementation, and operation of small satellites for scientific applications, and the development of educational programs in small satellites.

University of Colorado, College of Engineering Distinguished Alumni Award, 2019

Aerospace Engineering Sciences Distinguished Performance Award, 2016

Max S. Peters College of Engineering Service Award, 2015

Victor Charles Schelke Endowed Professor, 2014

Inaugural Aerospace Engineering Sciences Service Award, 2014

NASA Group Achievement Award – MIZOPEX Campaign, 2014

University of Colorado Emerging Leaders Program Fellow, 2012-2013

University of Canterbury – Erskine Fellow, 2009

United States Antarctic Service Medal, 2008

University of Colorado - Council on Creative Work Faculty Fellowship, 2008

NASA Group Achievement Award – TIMED mission, 2008

University of Colorado - Dean's Award for Outstanding Junior Faculty, 2007

AIAA - Educator of the Year, Rocky Mountain Region, 2007

Fulbright Senior Specialist Fellowship, 2007

Sigma Xi - Northwest Regional Young Investigator, 2004 & 2006

National Science Foundation - Early Career Award, 2005

University of Colorado - Dean's Outstanding Teaching Award, 2005

National Center for Atmospheric Research - HAO Postdoctoral Research Fellow, 1995-1997

PROFESSIONAL ORGANIZATIONS

American Institute of Aeronautics and Astronautics (AIAA) – Fellow
Institute of Electrical and Electronic Engineers (IEEE) – Senior Member
American Geophysical Union (AGU) – Regular Member
International Union of Radio Scientists (URSI) – Regular Member Commission G
American Society of Engineering Educators (ASEE) – Regular Member
Sigma Xi – Full member

RESEARCH CENTER AFFILIATIONS

Colorado Center for Astrodynamics Research (CCAR)
Research and Engineering Center for Unmanned Vehicles (RECUV)

SCOTT E. PALO

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES (5378[#] CITATIONS, H-INDEX 42, I-10 INDEX 96)

1. Wallace¹, B., S. Palo, P. Axelrad, J. Marino, N. Rainville, J. DiTomas, R. Kingsbury, M. Shihabi and D. Ogbe, "A Lunar Surface Pseudolite Architecture for Regional Communication and Radionavigation", *IEEE Transactions of Aerospace and Electronic Systems*, Vol XXX, No XX, 2025 (accepted for publication).
[10.1109/TAES.2024.3520536](https://doi.org/10.1109/TAES.2024.3520536)
2. Berry, R., P. Bustamante, D. Guo, T. Hazlett, M. Honig, I. Murtazashvili, S. Palo, and M.B.H Weiss, "Spectrum Rights in Outer Space: Interference Management for Low Earth Orbit (LEO) Broadband Constellations" *Journal of Information Policy* 2024.
<https://doi.org/10.5325/jinfopoli.14.2024.0021>
3. Dawkins, E.C.M., D. Janches, G. Stober, J.D. Carrillo-Sánchez, R.S. Lieberman, C. Jacobi, T. Moffat-Griffin, N.J. Mitchell, N. Cobbett, P.P. Batista, V.F. Andrioli, R.A. Buriti, D.J. Murphy, J. Kero, N. Gulbrandsen, M. Tsutsumi, A. Kozlovsky, M. Lester, J-H. Kim, C. Lee, A. Liu, B. Fuller, D. O'Connor, S.E. Palo, M.J. Taylor, J. Marino, N. Rainville, "Seasonal and local time variation in the observed peak of the meteor altitude distributions by meteor radars", *Journal of Geophysical Research:Atmospheres*, 129, e2024JD040978., 2024.
<https://doi.org/10.1029/2024JD040978>
4. Fitzpatrick¹, D.J. and S.E. Palo, "Innovative Systems Engineering Solutions for Power-Positive Operations: Navigating the Multi-Constraint Challenges of the SWARM-EX CubeSat Mission", *Advances in Space Research*, 2024.
<https://doi.org/10.1016/j.asr.2024.06.057>
5. Stober, G., S. L. Vadas , E. Becker , A. Liu , A. Kozlovsky , D. Janches , Z. Qiao , W. Krochin, G. Shi, W. Yi , J. Zeng, P. Brown, D. Vida , N. Hindley, C. Jacobi, D. Murphy, R. Buriti, V. Andrioli, P Batista, J. Marino, S. Palo, D. Thorsen, M. Tsutsumi, N. Gulbrandsen, S. Nozawa, M. Lester, K. Baumgarten, J. Kero , E. Belova, N. Mitchell, T. Moffat-Griffin, and N. Li, "Gravity waves generated by the Hunga Tonga–Hunga Ha'apai volcanic eruption and their global propagation in the mesosphere/lower thermosphere observed by meteor radars and modeled with the High-Altitude general Mechanistic Circulation Model", *Atmos. Chem. Phys.*, 24, 4851–4873, 2024.
<https://doi.org/10.5194/acp-24-4851-2024>
6. Marino¹, J., N. Rainville and S.E. Palo, "A Fully Polarimetric Meteor Radar", *URSI Radio Science Letters*, Vol 5, 2024.
<https://doi.org/10.46620/23-0020>
7. Rainville, N., J. Marino, S. Palo, R. Volz, "Multistatic Radar Development for the Colorado Zephyr Meteor Radar Network", *URSI Radio Science Letters*, Vol 4, 2023.
<https://doi.org/10.46620/22-0061>
8. Dhakal, P. S. Prohira, C.V. Cappiello, J.F. Beacom, S. Palo and J. Marino¹, "New Constraints on Macroscopic Dark Matter Using Radar Meteor Detectors", *Phys. Rev. D*, 107, 043026 2023.
<https://doi.org/10.1103/PhysRevD.107.043026>

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¹ Student is first author.

9. Forbes, J. M., X. Zhang, and S.E. Palo, "UFKW propagation in the dissipative thermosphere", *Journal of Geophysical Research: Space Physics*, 128, e2022JA030921, 2023.
<https://doi.org/10.1029/2022JA030921>
10. Marino¹, J., S.E. Palo, S. E., & N. Rainville, "First observations from a new meteor radar at McMurdo Station Antarctica (77.8°S, 166.7°E)" *Radio Science*, 57, 2022RS007466, 2022.
<https://doi.org/10.1029/2022RS007466>
11. Harvey V.L., C.E. Randall, S.M. Bailey, E. Becker, J.L. Chau, C.Y. Cullens, L.P. Goncharenko, L.L. Gordley, N.P. Hindley, R.S. Lieberman, H-L Liu, L. Megner, S.E. Palo, N.M. Pedatella, D.E. Siskind, F. Sassi, A.K. Smith, G. Stober, C. Stolle and J. Yue, "Improving ionospheric predictability requires accurate simulation of the mesospheric polar vortex", *Front. Astron. Space Sci.* 9:1041426, 2022.
<https://doi.org/10.3389/fspas.2022.1041426>
12. Johnson¹, K., J.H. Jiang, Q. Yue, K.A. Fahy, & S. Palo, "ENTICE satellite orbital simulator to study ice clouds", *Earth and Space Science*, 9, e2021EA002145, 2022.
<https://doi.org/10.1029/2021EA002145>
13. Dahir¹, A., C. Gillard, B. Wallace, J. Sobtzak, S.E. Palo and D. Kubitschek, "Forgoing Time and State – The Challenge for CubeSats on Artemis-1", *J. of Small Satellites*, Vol . 10(2), 2021.
<https://jossonline.com/storage/2021/08/Final-Dahir-Forgoing-Time-and-State-%E2%80%93-The-Challenge-for-CubeSats-on-Artemis-1.pdf>
14. Rainville¹, N., S.E. Palo and K. Larson, "Modelling GPS Signal Propagation through Volcanic Plumes", *J. of Geophysical Research: Space Physics*, 126, e2020JD034526, 2021.
<https://doi.org/10.1029/2020JD034526>
15. Wang¹, J. C., Palo, S. E., Forbes, J. M., Marino, J., Moffat-Griffin, T., & Mitchell, N. J, "Unusual quasi 10-day planetary wave activity and the ionospheric response during the 2019 Southern Hemisphere sudden stratospheric warming", *J. of Geophysical Research: Space Physics*, 126, e2021JA029286, 2021.
<https://doi.org/10.1029/2021JA029286>
16. Wang¹, J.C, S.E. Palo, H.L. Liu and D.E. Siskind, "Day-to-Day Variability of Diurnal Tide in the Mesosphere and Lower Thermosphere Driven From Below", *J. of Geophysical Research: Space Physics*, Vol 126(2), 2021.
<https://doi.org/10.1029/2019JA027759>
17. Van Buren¹, D., P. Axelrad, and S. Palo, "A low complexity smoothing algorithm for improved GPS point solutions on board LEO spacecraft", *NAVIGATION, Journal of the Institute of Navigation*, Vol 68(1), pp. 185-198, 2021.
<https://doi.org/10.1002/navi.410>
18. Van Buren¹, D., P. Axelrad, and S. Palo, "Design of a high-stability heterogeneous clock system for small satellites in LEO", *GPS Solutions*, Vol 25(3), pp. 1-14, 2021.
<https://doi.org/10.1007/s10291-021-01134-x>
19. Stober, G. D. Janches, V. Matthias, D. Fritts, J. Marino, T. Moffat-Griffin, K. Baumgarten, W. Lee, D. Murphy, Y.H. Kim, N. Mitchell and S. Palo, "Seasonal evolution of winds, atmospheric tides, and Reynolds stress components in the Southern Hemisphere mesosphere–lower thermosphere in 2019", *Annales Geophysicae*, Vol 29(1), pp. 1-29, 2021

<https://angeo.copernicus.org/articles/39/1/2021/angeo-39-1-2021.html>

20. Mason, J.P, T.N. Woods, P.C. Chamberlin, A. Jones, R. Kohnert, B. Schwab, R. Sewell, A. Caspi, C.S. Moore, S.E. Palo, S. Solomon, and H. Warren, "MinXSS-2 CubeSat mission overview: Improvements from the successful MinXSS-1 mission", *Adv. Space Res.*, Vol 66(1), pp. 2-9, 2020.
<https://doi.org/10.1016/j.asr.2019.02.011>
21. Rainville¹, N., S.E. Palo, K.M. Larson and M. Mattia, "Design and Preliminary Testing of the Volcanic Ash Plume Receiver Network", *J. Atmos. Ocean Tech.*, Vol 36(3), pp. 353-367, 2019.
<https://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-18-0177.1>
22. Buck¹, S., S. Oerlemans and S.E. Palo, "Experimental Validation of a Wind Turbine Turbulent Inflow Noise Prediction Code", *AIAA Journal*, Vol. 56, No. 4, pp. 1495-1506, 2018.
<https://doi.org/10.2514/1.J056134>
23. de Boer, G., M.D. Ivey, B. Schmid, D.A. Lawrence, D. Dexheimer, F. Mei, J. Hubbe, A.O. Bendure, J.O.E. Hardesty, M.D. Shupe, A. McComiskey, H. Telg, C. Schmitt, S. Y. Matrosov, I. Brooks, J. Creamean, A. Solomon, D.D. Turner; C. Williams; M. Maahn, B. Argrow; S.E. Palo; C.N. Long; R-S Gao, and J. Mather, "A Bird's Eye View: Development of an Operational ARM Unmanned Aerial Capability for Atmospheric Research in Arctic Alaska", *Bulletin of the American Meteorological Society*, Vol 99(6), pp. 1197-1212, 2018.
<https://doi.org/10.1175/BAMS-D-17-0156.1>
24. Vaudrin¹, C., and S.E. Palo, "Complex Plane Specular Meteor Radar Interferometry", *Radio Sci.*, Vol 51, No. 1, pp 112-128, 2018.
<https://doi.org/10.1002/2017RS006317>
25. Mason, J.P, M. Baumgart, B. Rogler, C. Downs, M. Williams, T.N. Woods, S.E. Palo, P.C. Chamberlin, S. Solomon, A. Jones, X. Li, R. Kohnert and A. Caspi, "MinXSS-1 CubeSat On-Orbit Pointing and Power Performance: The First Flight of the Blue Canyon Technologies XACT 3-axis Attitude Determination and Control System", *J. of Small Satellites*, Vol 6., No. 3, pp 651-662, 2017.
26. Loucks¹, D.C, S.E. Palo, M.D. Pilinski, G. Crowley, I. Azeem and D. Hampton, "High-Latitude GPS Phase Scintillation from E Region Electron Density Gradients During the December 20-21, 2015 Geomagnetic Storm", *J. of Geophysical Research Space Physics*, Vol. 122, No. 7, 7473-7490, 2017.
<http://dx.doi.org/10.1002/2016JA023839>
27. Larson, K.M. S.E. Palo, C. Roesler, M. Mattia, V. Bruno, M. Coltelli and D. Fee, "Detection of Plumes at Redoubt and Etna Volcanoes using the GPS SNR Method", *J. of Volcanology Geothermal Research*, Vol 344, 26-39, 2017.
<http://doi.org/10.1016/j.jvolgeores.2017.04.005>
28. Lieberman, R.S., D.M. Rigglin, V. Nguyen, S.E. Palo, D.E. Siskind, N.J. Mitchell, G. Strober, S. Wilhelm and N.J. Livesey, "Global observations of two-day wave coupling to the diurnal tide", *J. of Geophysical Research Atmospheres*, Vol 122, No. 8, 4135-4149, 2017.
<http://dx.doi.org/10.1002/2016jd025144>
29. Woods, T.N. A. Caspi, P.C. Chamberlin, A. Jones, R. Kohnert, J.P. Mason, C.S. Moore, S. Palo, C. Rouleau, S.C. Solomon, J. Machol, R. Vierec, "New Solar Irradiance Measurements from the Miniature X-Ray Solar Spectrometer CubeSat", *The Astrophysical Journal*, Vol. 835, No. 2, 2017.
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30. Weibel¹, D., D. Lawrence and S.E. Palo, "Optical Beacon Sensor for Small Un-manned Aerial System State Estimation", *J. of Field Robotics*, Vol. 34, No. 3, pp477-494, 2017.
<http://dx.doi.org/10.1002/rob.21648>
31. Buck¹, S., S. Oerlemans, S.E. Palo, "Experimental Characterization of Turbulent Inflow Noise on a Full-scale Wind Turbine", *J. of Sound and Vibration*, Vol. 385, pp. 219-238, 2016.
<http://dx.doi.org/10.1016/j.jsv.2016.09.010>
32. Gerhardt¹, D., and S.E. Palo, "Volume Magnetization for System-Level Testing of Magnetic Materials within Small Satellites", *Acta Astronautica*, Vol. 127, pp. 1-12, 2016.
<http://dx.doi.org/10.1016/j.actaastro.2016.05.017>
33. Pilinski, M.D., R.L. McNally, B.A. Bowman, S.E. Palo, J.M. Forbes, B.L. Davis, R.G. Moore, K. Kemble, C. Koehler, and B. Sanders. "Comparative Analysis of Satellite Aerodynamics and Its Application to Space-Object Identification", *J. Spacecraft and Rockets*, Vol. 53, No. 5, pp. 876-886, 2016.
<http://dx.doi.org/10.2514/1.A33482>
34. Nguyen¹, V.A., S.E. Palo, R.S. Lieberman, J.M. Forbes and D.A. Ortland, "Generation of Secondary Waves Arising from Nonlinear Interactions between the Quasi Two-Day Wave and the Migrating Diurnal Tide", *J. Geophysical Research*, Vol. 121, No. 13, pp. 7762-7780, 2016.
<http://dx.doi.org/10.1002/2016JD024794>
35. Mason¹, J.P. T.N. Woods, A. Caspi, P.C. Chamberlin, C. Moore, A. Jones, R. Kohnert, X. Li, S. Palo, and S. C. Solomon. "Miniature X-Ray Solar Spectrometer: A Science-Oriented, University 3U CubeSat", *J. Spacecraft and Rockets*, Vol. 53, No. 2, pp. 328-339, 2016.
<http://dx.doi.org/10.2514/1.A33351>
36. de Boer, G., S. Palo, B. Argrow, G. LoDolce, J. Mack, R-S. Gao, H. Telg, C. Trussel, J. Fromm, C. N. Long, G. Bland, J. Maslanik, B. Schmid and T. Hock, "The Pilatus Unmanned Aircraft System for Lower Atmospheric Research", *Atmospheric Measurement Techniques*, Vol. 9, pp. 1845-1857, 2016.
<http://dx.doi.org/10.5194/amt-9-1845-2016>
37. Cassano, J.J, M.W. Seefeldt, S.E. Palo, S.L. Knuth, A. Bradley, P.D. Herman, P.A. Kernborne and N.J. Logan, "Observations of the Atmosphere and Surface State Over Terra Nova Bay, Antarctica Using Unmanned Aircraft Systems", *Earth Syst. Sci. Data*, Vol. 8, 115–126, 2016.
<http://dx.doi.org/10.5194/essd-8-115-2016>
38. Weibel¹, D., D. Lawrence and S.E. Palo, "Small Un-manned Aerial System Attitude Estimation for Flight in Wind", *J. of Guidance, Control, and Dynamics*, Vol. 38, No. 7, pp. 1300-1305., 2015.
<http://dx.doi.org/10.2514/1.G000888>
39. Bradley¹, A., S.E. Palo, D. Lawrence, G. LoDolce and D. Weibel, "Air Deployed Micro Buoy measurement of temperatures in the marginal ice zone upper ocean during MIZOPEX campaign", *J. of Ocean. and Atmos. Tech*, Vol. 32, pp. 1058-1070, 2015.
<http://dx.doi.org/10.1175/JTECH-D-14-00209.1>
40. Truskowski, A.O., J.M. Forbes, X. Zhang, S.E. Palo, "New perspectives on thermosphere tides: 1. Lower thermosphere spectra and seasonal-latitudinal structures", *Earth, Planets and Space*, 66:136, 2014.
<https://doi.org/10.1186/s40623-014-0136-4>

41. Nguyen¹, V., and S.E. Palo, "Transmission of planetary wave effects to the upper atmosphere through eddy diffusion modulation", *J. Atmos. Solar. Terr. Res.*, Volumes 117, Pages 1-6, ISSN 1364-6826, <https://doi.org/10.1016/j.jastp.2014.04.008>
42. Gerhardt¹, D., S.E. Palo, X. Li, L. Blum, Q. Schiller and R. Kohnert, "The Colorado Student Space Weather Experiment (CSSWE) On-Orbit Performance", *J. of Small Satellites*, Vol. 03, No. 01, pp. 265-281, 2014. <https://jossonline.com/storage/2021/08/0301-Gerhardt-The-Colorado-Student-Space-Weather.pdf>
43. Li, X., S. Palo, R. Kohnert, D. Gerhardt, L. Blum, Q. Schiller, D. Turner, W. Tu, N. Sheiko, and C. S. Cooper, Colorado student space weather experiment: Differential flux measurements of energetic particles in a highly inclined low Earth orbit, in *Dynamics of the Earth's Radiation Belts and Inner Magnetosphere*, Geophys. Monogr. Ser., vol. 199, edited by D. Summers, I. R. Mann, D. N. Baker, and M. Schulz, pp. 385–404, AGU, Washington, D. C., 2013. <https://doi.org/10.1029/2012GM001313>
44. Nguyen¹, V., and S.E. Palo, "A technique for estimating the short term variability of the diurnal tide utilizing multiple satellites", *J. Atmos. Solar. Terr. Res.*, Volumes 105–106, Pages 39-53, ISSN 1364-6826, 2013. <http://dx.doi.org/10.1016/j.jastp.2013.07.008>
45. Li, X., Q. Schiller, L. Blum, S. Califf, H. Zhao, W. Tu, D. Turner, D. Gerhardt, S. Palo, R. Selesnick, S. Kanekal, D.N. Baker, J. Fennell, J.B. Blake, M. Looper, G. D. Reeves, and H. Spence, First Results from CSSWE CubeSat: Characteristics of Relativistic Electrons in the Near-Earth Environment During the October 2012 Magnetic Storms, *Journal of Geophysical Research*, 118, 2013. <https://doi.org/10.1002/2013JA019342>
46. Li, X., S. Palo, R. Kohnert, L. Blum, D. Gerhardt, Q. Schiller, and S. Califf, "Small Mission Accomplished by Students – Big Impact on Space Weather Research", *Space Weather*, 11, 55-56, 2013. <https://doi.org/10.1002/swe.20025>
47. Pilinski¹, M., B.M. Argrow, S.E. Palo and B.R. Bowman, "A Semi-Empirical Satellite Accommodation Model for Spherical and Randomly Tumbling Objects", *AIAA J. Spacecraft and Rockets*, V50, 556-571, 2013.
48. Chandran¹, A., Rusch, D. W., Thomas, G. E., Palo, S. E., Baumgarten, G., Jensen, E. J., and Merkel, A. W. Atmospheric gravity wave effects on polar mesospheric clouds: A comparison of numerical simulations from CARMA 2D with AIM observations. *Journal of Geophysical Research: Atmospheres* (1984–2012), 117(D20), 2012.
49. Shriver¹, P. M., Palo, S. E., Zenick, R. G., and Balas, M. J., "Reward-Lifetime Scheduling Approach to the Autonomous Spacecraft Power Management Problem", *Journal of Aerospace Computing, Information, and Communication*, 9(2), 58-67, 2012.
50. Li, X., S. Palo, R. Kohnert, D. Gerhardt, L. Blum, Q. Schiller, D. Turner, W. Tu, N. Sheiko, and C. S. Cooper, Colorado Student Space Weather Experiment: Differential flux measurements of energetic particles in a highly inclined low Earth orbit, in *Dynamics of the Earth's Radiation Belts and Inner Magnetosphere*, Geophys. Monogr. Ser., vol. 199, edited by D. Summers et al., 385–404, AGU, Washington, D. C., doi:10.1029/2012GM001313, 2012.

51. Pilinski¹, M.D., Argrow, B. M., Palo, S.E., Moe, K., Sutton, E., Doornbos, E., & Marcos, F., Drag coefficients of satellites with concave geometries: Comparing models and observations. *Journal of Spacecraft and Rockets*, 48(2), 2012.
52. Crocker¹, R.I., J.A. Maslanik, J.J. Adler, S.E. Palo, U.C. Herzfeld, and W.J. Emery, "A Sensor Package for Ice Surface Characterization Using Small Unmanned Aircraft Systems", *IEEE Trans. Geosci. Remote Sens.*, 50, doi:10.1109/TGRS.2011.2167339, 2012.
53. Chang¹, L.C., W.E. Ward, S.E. Palo, J. Du, D.-Y. Wang, H.-L. Liu, M.E. Hagan, Y. Portnyagin, J. Oberheide, L.P. Goncharenko, T. Nakamura, P. Hoffmann, W. Singer, P. Batista, B. Clemesha, A.H. Manson, D.M. Riggan, C.-Y. She, T. Tsuda, T. Yuan, "Comparison of Diurnal Tide in Models and Ground-Based Observations during the 2005 Equinox CAWSES Tidal Campaign", *J. Atmos. Solar Terr. Phys.*, 78=79, doi:10.1016/j.jastp.2010.12.010, 2012.
54. Chang¹, L.C., J. Liu, and S.E. Palo, Propagating planetary wave coupling in SABER MLT temperatures and GPS TEC during the 2005/2006 austral summer, *J. Geophys. Res.*, 116, A10324, doi:10.1029/2011JA016687, 2011.
55. Suzuki, S., M. Tsutsumi, S.E. Palo, Y. Ebihara, M. Taguchi and M. Ejiri, "Mesospheric Gravity Waves over the South Pole", *J. Geophys. Res.*, doi:10.1029/2011JD015882, 2011.
56. Pilinski¹, M., K. Moe, S.E. Palo and B.M. Argrow, "Measuring absolute thermospheric densities and accommodation coefficients using paddlewheel satellites: Past findings, present uses and future mission concepts", *J. of Astronautical Sciences*, v58, n3, pp 531, 2011.
57. Chang¹, L.C., S. E. Palo and H.-L. Liu, "Short-term variability in the migrating diurnal tide caused by interactions with the quasi 2 day wave", *J. Geophys. Res.*, 116, D12112, doi:10.1029/2010JD014996, 2011.
58. Li, X., Palo, S. and Kohnert, R. "Small Space Weather Research Mission Designed Fully by Students", *Space Weather*, v9, S04006, doi:10.1029/2011SW000668, 2011.
59. Pilinski¹, M., B.M. Argrow, S.E. Palo, "A Semi-Empirical Model for Satellite Energy-Accommodation Coefficients", *AIAA J. Spacecraft Rockets*, v47, n6, doi:10.2514/1.49330, 2010.
60. Chang¹, L. C., S. E. Palo, H.-L. Liu, T.-W. Fang, and C. S. Lin, "Response of the thermosphere and ionosphere to an ultra fast Kelvin wave", *J. Geophys. Res.*, 115, A00G04, doi:10.1029/2010JA015453, 2010.
61. Iimura¹, H., D. C. Fritts, Q. Wu, W. R. Skinner, and S. E. Palo, "Nonmigrating semidiurnal tide over the Arctic determined from TIMED Doppler Interferometer wind observations", *J. Geophys. Res.*, 115, D06109, doi:10.1029/2009JD012733, 2010.
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32. Palo, S.E., D. O'Connor, E. DeVito, R. Kohnert, G. Crum and S. Altunc, "Expanding CubeSat Capabilities with a Low Cost Transceiver", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2014.
33. Schiller¹, Q., D. Gerhardt¹, L. Blum¹, X. Li and S.E Palo, "Design and Scientific Return of a Miniaturized Particle Telescope Onboard the Colorado Student Space Weather Experiment (CSSWE) CubeSat", *Proc. of the IEEE Aerospace Conference*, Big Sky, MT, 2014.
34. Palo, S.E., G. Stafford and A. Hoskins, "An Agile Multi-Use Nano Star Camera for Constellation Applications", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2013.
35. Buck¹, S., S. Palo and P. Moriarty, "Application of Phased Array Techniques for Amplitude Modulation Mitigation", *Proc. of the 5th International Conference on Wind Turbine Noise*, Denver, CO, 2013.

36. Buck¹, S., S. Palo, P. Moriarty, J. Roadman, and M. Asheim, "Acoustic Array Design for Wind Turbine Noise Measurements", *Proc. of the 5th International Conference on Wind Turbine Noise*, Denver, CO, 2013.
37. Palo, S., X. Li, D. Gerhardt¹, D. Turner¹, R. Kohnert, V. Hoxie and S. Batiste, "Conducting Science with a CubeSat: The Colorado Student Space Weather Experiment", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2010.
38. Gerhardt¹, D. and S.E Palo, "Passive Magnetic Attitude Control for CubeSat Spacecraft", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2010. – Paper won 2nd place in the Frank J. Redd Student Scholarship (paper) competition.
39. Tanner, J. and S. Palo, "Project Based Learning at the Graduate Level", *Proc. of the 2010 Capstone Design Conference*, Boulder, CO, 2010.
40. Simley¹, E., P. Moriarty, and S. Palo, "Aeroacoustic Noise Measurements of a Wind Turbine with BSDS Blades using an Acoustic Array," *48th AIAA Aero. Sci. Mtg.*, 2010.
41. Pilinski¹, M. and S.E. Palo, "An Innovative Method for Measuring Drag on Small Satellites", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2009. – Paper won 1st place in the Frank J. Redd Student Scholarship (paper) competition.
42. Davis¹, B. and S.E. Palo, "The Design and Development of a Separation System for a Low-Cost Spherical Nanosatellite", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2009. – Paper won 2nd place in the Frank J. Redd Student Scholarship (paper) competition.
43. Williams¹, A.D. and S.E. Palo, "Forced Air Convection Thermal Switch Concept for Responsive Space Missions", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2006.
44. Mackison, D., J. Fulton, and S. Palo, "LQ Attitude Control-Frequency Shaped, Modal Weighting, LTR, GCC and Order Reduction", *Proc. of the AIAA Astrodynamics Specialists Conference*, Keystone, CO, 2006.
45. Williams¹, A.D. and S.E. Palo, "Forced Air Convection Thermal Switch Concept for Responsive Space Missions", *Proc. of the 9th International Energy Conversion Engineering Conference*, San Diego, CA, 2006.
46. Williams¹, A.D. and S.E. Palo, "Modeling and Analysis of a Robust Thermal Control System Based on Forced Convection Thermal Switches", *Proc. of the SPIE Defense and Security Symposium*, Kissimmee, FL, 2006.
47. Williams¹, A.D. and S.E. Palo, "A Comparison of Thermal Management Design Using Thermal Switches to Traditional Design Approaches with Application to Responsive Space Missions", *Proc. of the 4th International Energy Conversion Engineering Conference*, San Diego, CA, 2006.
48. Williams¹, A.D. and S.E. Palo, "Issues and Implications of the Thermal Control System on Responsive Space Missions", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2006.
49. Fulton¹, J., S. Palo and D. Mackison "Modified Hybrid Coordinate Approach for Small Flexible Spacecraft with Gravity Gradient Stabilization", *Proc. of the AIAA Small Satellite Conference*, Logan, UT, 2006.
50. Williams¹, A.D. and S.E. Palo, "Issues and Implications of the Thermal Control System on the Six Day Spacecraft", *Proc. of the 4th Responsive Space Conference*, Los Angeles, CA, AIAA-RS4-2006-6001, 2006.
51. Pisano¹, W.J., D.A. Lawrence, and S.E. Palo, "Low-Cost UAV Avionics for Autonomous Antenna Calibration", *Proc. of the AIAA Unmanned Unlimited Conference*, 2005.

52. Shriver¹, P., "Opening the Door to Smart Power Management in Small Satellites", Proc. of the AIAA Small Satellite Conference, Logan, UT, 2003. – **Paper won 3rd place in the Frank J. Redd Student Scholarship (paper) competition.**
53. Axelrad, P., D.M. Akos, K.M. Larson, G.H. Born, R.S. Nerem, and S. Palo, "GPS Research and Education at the University of Colorado, Boulder", *Proc. of the Institute of Navigation 60th Annual Meeting*, Dayton, OH, 2004.
54. Eheim¹, C., C. Dixon, B.A. Argrow, and S. Palo, "TornadoChaser: A Remotely-Piloted UAV for Insitu Meteorological Measurements", *Proc. of the 1st AIAA Conference on Unmanned Aerospace Vehicles*, 2002.
55. Palo, S.E., J.L. Chang, S.K. Avery, A.C. Riddle, and K.S. Gage, "Detection of outliers in stratospheric/tropospheric wind velocity estimates", *Proc. of the Seventh Workshop on Technical and Scientific Aspects of MST Radar*, Hilton Head, SC, 237-240, 1996.
56. Chang, J.L., S.K. Avery, A.C. Riddle, S.E. Palo, J.R. McAfee, and K.S. Gage, "Preliminary observations of tropospheric gravity wave momentum fluxes measured with the Christmas Island ST radar", *Proc. of the Seventh Workshop on Technical and Scientific Aspects of MST Radar*, Hilton Head, SC, 50-53, 1996.
57. Palo, S.E., and S.K. Avery, "Analysis of nonstationary time series using the Wigner-Ville distribution", *Proc. of the Fifth Workshop on Technical and Scientific Aspects of MST Radar*, Aberystwyth, UK, University College of Wales, 464-469, 1992.

TECHNICAL REPORTS

1. de Boer, G., B. Argrow, G. Bland, J. Elston, D. Lawrence, J. Maslanik, S. Palo, and M. Tschudi, "Evaluation of Routine Atmospheric Sounding Measurements using Unmanned Systems (ERASMUS) Science Plan", DOE Office of Science Atmospheric Radiation Measurement (ARM) Program DOE/SC-ARM-15-048, 2015.
2. Buck, S., J. Roadman, P. Moriarty and S. Palo, "Acoustic Array Development for Wind Turbine Noise Characterization", NREL/TP-5000-60457, 2013.

PAPERS IN REVISION, REVIEW AND PREPARATION

1. Fitzpatrick¹, D., R. Bishop, M. Pilinski and S. Palo, "Applying Energy Dissipation Rate GNSS Accelerometry to a Non-Circular Orbiting Satellite", *Earth and Space Science* (under review).
2. Dahir¹, A., E. Reidel, W. Owens, D. Kubitschek and S.E. Palo, "The First Full Solution for the Lost in Space Orbit Determination Problem: Part 1 - Recovering Time in Deep Space Using Planetary Bodies", *Acta Astronautica* (in revision).
3. Dahir¹, A., E. Reidel, W. Owens, D. Kubitschek and S.E. Palo, "The First Full Solution for the Lost in Space Orbit Determination Problem: Part 2 - Recovering Time in Deep Space Using Planetary Bodies", *Acta Astronautica* (in revision).
4. Gill, E. and S. Palo, "Towards a GNSS-Assisted Autonomous Heterogeneous Clock System for Very Small Satellites in the Earth-Moon System", *Acta Astronautica* (under review).
5. Fitzpatrick¹, D., E.K. Sutton, M. Pilinski and S. Palo, "Solar Terminator Waves Observed in Thermospheric Densities from GRACE-FO and CHAMP through Comparison with HASDM", *Geophysical Research Letters* (under review).

SCOTT E. PALO RESEARCH FUNDING

SPONSORED PROJECTS

AGENCY	TITLE	START DATE	END DATE	PI, Co-PI, Co-I	TOTAL
NSF/ NSWP	A study of large-scale ionospheric structure using the TOPEX/Poseidon TEC measurements	SEP-96	AUG-99	Co-PI	\$70,520
NSF/ CEDAR	Investigation of the quasi-two-day wave using a general circulation model	JAN-97	DEC-00	PI	\$139,497
CoRA ¹	MF radar collaborative studies	APR-97	MAR-00	PI	\$40,137
NASA/ MTPE	Chemical and dynamical variability in the middle atmosphere	JAN-98	DEC-00	Co-I	\$306,846
AFOSR	A low-cost, remotely-deployable, meteor radar system for mesosphere/ionosphere coupling studies	JAN-98	NOV-00	PI	\$108,464
NASA/ GSFC	Educational Outreach	MAR-98	FEB-02	PI	\$14,739
NASA/ OSS	Extraction of planetary waves from satellite observations	APR-98	FEB-02	PI	\$129,563
NASA/ OSS	Tides, planetary wave and eddy forcing of the mean MLT circulation for the TIMED science working group	APR-98	AUG-01	Co-I	\$305,260
NSF/ CEDAR	An intensive co-located intercomparison of radar and optical wind and temperature measurements in the mesopause region	JAN-99	DEC-00	PI	\$31,390
NSF/ Aeronomy	Dynamics of the Antarctic MLT region using ground-based radar and TIMED instruments	JAN-00	DEC-01	Co-PI	\$285,668
NSF/ Aeronomy	Coordinated analysis of the zonal mean circulation and semidiurnal tide in the mesosphere and lower-thermosphere using ground-based radar and TIMED observations	FEB-00	JAN-02	PI	\$59,712
NSF/OPP	Long-term wind and temperature measurements in the Arctic mesosphere and lower thermosphere	FEB-00	JAN-05	PI	\$691,021
AFOSR	A remotely-deployable system for measuring low-latitude atmosphere-ionosphere disturbances	APR-01	MAR-02	PI	\$184,950
AeroAstro	Autonomous satellite power scheduling (Phase 1 – NASA/STTR)	JAN-03	JAN-04	PI	\$16,416
NASA/ OSS	Tides, planetary wave and eddy forcing of the mean MLT circulation for the TIMED science working group	JAN-03	DEC-06	Co-I	\$1,407,000
NSF/ CEDAR	Planetary wave induced tidal variability	JAN-03	DEC-06	PI	\$217,998

AGENCY	TITLE	START DATE	END DATE	PI,Co-PI	TOTAL
NSF/Aeronomy	High latitude dynamical studies using radar and satellite observations	SEP-03	AUG-06	PI	\$306,377
AeroAstro	Autonomous spacecraft power scheduling (Phase 2 - NASA/STTR)	MAY-04	MAY-06	PI	\$21,030
NSF/Aeronomy	CAREER: Development of a distributed multistatic meteor radar system	JAN-05	DEC-11	PI	\$497,395
NASA	Global structure and modeling of the non-migrating tides using TIMED, GPS and ground-based measurements	JAN-05	DEC-07	PI	\$276,401
CoRA ¹	Micro meteors and their interaction with the atmosphere: A comprehensive study using the Arecibo and Jicamarca observations	AUG-05	OCT-06	PI	\$59,288
NSF/ANS	Ice freeboard, roughness and topography for UAV laser profilometry, satellite and surface observations: relationships to ice dynamical and thermodynamical properties	AUG-05	JUL-08	Co-PI	\$735,224
NASA	MESA global voyagers	OCT-05	SEP-07	PI	\$44,995
CoRA ¹	Interhemispheric analysis of polar MLT radar observations	JAN-06	DEC-07	PI	\$46,495
NSF/OPP	Collaborative studies of the Antarctic mesosphere and lower-thermosphere	SEP-06	AUG-11	PI	\$1,431,245
AFRL	Drag and neutral density explorer	JAN-07	JAN-09	Co-PI	\$110,000
NASA	Application of high-rate GPS occultation data to enhance understanding of turbulence in the upper troposphere, stratosphere and ionosphere	JAN-08	DEC-10	Co-PI	\$545,000
NSF/CEDAR	CEDAR: Nonlinear Wave-Wave Induced Diurnal Tidal Variability	JAN-09	DEC-13	PI	\$262,500
AFRL	Drag and neutral density explorer	JAN-09	JAN-13	Co-PI	\$110,000
NSF	CubeSat: Colorado Student Space Weather Experiment	JAN-10	DEC-13	Co-PI	\$834,946
GTRI	Defeating Technology Surprise: Design & Build of Autonomous Cyber Exploiting Cubesats	JUL-10	Nov-12	PI	\$133,496
NSF	Collaborative Research: Ocean-Ice-Atmosphere Interactions in the Terra Nova Bay Polynya, Antarctica	AUG-11	JUL-14	Co-PI	\$1,053,986
NREL	Acoustic Array Development for Wind Turbine Testing	AUG-11	SEP-13	PI	\$226,153

AGENCY	TITLE	START DATE	END DATE	PI, Co-PI	TOTAL
NASA	Marginal Ice Zone Observations and Processes Experiment (MIZOPEX)	OCT-11	SEP-14	Co-PI	\$3,002,820
NASA	High Rate Cubesat X-band/S-band Communication System	OCT-13	SEP-15	PI	\$219,513
GATS	Data Analysis Support	FEB-14	AUG-14	PI	\$65,974
NSF	Collaborative Research: CubeSat Constellation for QB50 Mission	MAY-14	APR-18	PI	\$186,250
NASA	Thermodynamics and Heat Storage in the Marginal Ice Zone Oceanic Mixed Layer	AUG-14	JUL-17	PI	\$72,000
NASA	Miniature X-Ray Solar Spectrometer (MinXSS) Cubesat Mission	JUL-14	JUL-17	Co-PI	\$957,821
DOE	Evaluation of Routine Atmospheric Scientific Measurements using Unmanned Systems	JUL-14	JUL-16	Co-PI	\$206,296
NASA	Real-Time Volcanic Ash Detection Using a GPS Array Concept	APR-14	MAR-17	Co-PI	\$596,311
NSF	CNIC: US-Germany workshop on catalyzing development of a multistatic meteor radar for lower thermospheric and mesospheric wind fields	AUG-15	JUL-16	PI	\$64,765
JPL	Design of a CubeSat Communication System for Constellation Science	OCT-15	SEP-16	PI	\$52,394
JPL	Non-linearly interacting waves in Earth's upper atmosphere as discerned in the JPL "MUSTARD" observation record	OCT-15	SEP-17	PI	\$39,028
DARPA	UAV deployed microbuoys for Arctic Sensing	SEP-15	MAR-17	PI	\$463,899
NSF	CEDAR: Understanding Day-to-Day Tidal Variability	Apr-16	Mar-22	PI	\$381,663
NSF	Lower thermospheric science using a new meteor radar at McMurdo	Oct-16	Sep-23	PI	\$1,012,212
ARFL	MAXWELL: A CubeSat for High Rate Communications – Phase A	Jan-16	Dec-17	PI	\$109,991
AIA	Remote Sensing Tools, Applications, and Processing (TAP) Room Advanced Industry Accelerator (AIA) Infrastructure	Jul-16	Jun-19	PI	\$1,467,838
The Aerospace Corp.	Deep Space Navigation Graduate Project	Sep-16	May-18	PI	\$50,000
NOAA	Advancement and Deployment of Air-Deployable Micro Buoys (ADMBs) for Oceanic Research	Jul-17	Dec-18	Co-I	\$429,513

1 – CoRA is Colorado Research Associates a Division of Northwest Research Associates

AGENCY	TITLE	START DATE	END DATE	PI, Co-PI	TOTAL
GXM	MD5 support	Oct-17	Sep-18	PI	\$355,238
JPL	Time Out – Recovering Time & State for Autonomous Navigation Systems in Deep Space	Oct-18	Sept-19	PI	\$53,264
ARFL	MAXWELL: A CubeSat for High Rate Communications – Phase B	Jun-18	May-20	PI	\$548,857
NASA	Solar Cycle Studies for the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat Missions	Apr-18	Apr-22	Co-PI	\$2,242,633
NASA	CubeSat: Inner Radiation Belt Experiment (CIRBE)	Aug-18	Aug-22	Co-PI	\$3,963,589
NASA	SolarCube: An Imaging Spectro-Polarimeter CubeSat Mission for the Chromosphere and Transition Region: Phase A study	Jan-19	Aug-19	Co-I	\$37,753
NSF	CubeSat: Climatology of Anthropogenic and Natural VLF wave Activity in Space (CANVAS)	Feb-19	Jan-23	Co-PI	\$1,196,654
Air Force	ON DEMAND PNT (OD-PNT)	Feb-20	Jun-24	Co-I	\$3,426,599
NSF	Collaborative Research: DASI Track 1: Development of a Distributed MIMO Meteor Radar Network for Space Weather Research	Jan-20	Dec-23	PI	\$1,231,988
NSF	CubeSat Ideas Lab: Collaborative Research: Space Weather Atmospheric Reconfigurable Multiscale Experiment (SWARM-EX) CubeSats	Jan-20	Dec-23	PI	\$2,470,673
NASA	A Small Satellite Lunar Communications and Navigation System	Jul-20	Jun-22	PI	\$399,911
NSF	SII Planning: Creating a Visionary, Interdisciplinary, and Transformational National Center for Spectrum and Wireless Systems Research	Aug-20	Jul-21	PI	\$299,942
State of Colorado	Hybrid Small Satellite Communications	Aug-20	Jul-21	PI	\$125,000
NSF	SpectrumX: A National Center for Spectrum Innovation	Sept-21	Sep-26	Co-I	\$25,000,000
NASA	CubIXSS	Aug-20	Jul-21	Co-I	\$50,000
Air Force	RALPHIE CubeSat	Jan-21	Feb-23	PI	\$219,998
AFRL	Multi-Phenomenological, Autonomous, and Understandable SDA and XDA Decision Support	Oct-23	Sept-28	Co-I	\$4,999,852

SUPPORTED RESEARCH STAFF

NAME	POSITION	DATES	TOPIC
Dr. Irfan Azeem	Post-Doc	2000-2002	Analysis of UARS measurements
Dr. Elias Lau	Research Assoc.	2007-2009	Meteor radar support
Mr. Gabriel LoDolce	Prof. Res. Assoc.	2012-2016	MIZOPEX and meteor radar analysis
Dr. Ryan Kingsbury	Research Assoc.	2020-present	FPGA development, denied GPS
Dr. Nick Rainville	Research Assoc.	2022-present	RF Space domain awareness
Mr. Austin Bathgate	Prof. Res. Assoc.	2023-present	Electronics test and development
Dr. John Marino	Research Assoc.	2024	Multistatic Meteor Radar Development

RESEARCH SUMMARY

Number of Projects: 68 Total: 44 as PI and 24 as Co-PI or Co-I

Total Research Funding: \$66,612,266

Total Research Funding as PI: \$24,657,189

SCOTT E. PALO

SUPERVISED DOCTORAL DISSERTATIONS

DOCTORAL DISSERTATIONS

1. Shriver, P., "Development and Analysis of a Resource-Aware Power Management System as Applied to Small Spacecraft", University of Colorado (AES), December 2005.
2. Fulton, J., "LQG/LTR Optimal Attitude Control of Small Flexible Spacecraft Using Free-Free Boundary Conditions", University of Colorado (AES), August 2006.
3. Kang, C., "Meteor Radar Signal Processing and Error Analysis", University of Colorado (AES), August 2008.
4. Iimura, H., "Dynamics of the Nonmigrating Semidiurnal Tide in the Mesosphere and Lower Thermosphere over the Antarctic and Arctic", University of Colorado (AES), December 2008.
5. Chandran, A., "Gravity Wave Effects on the Occurrence and Brightness of Polar Mesospheric Clouds", University of Colorado (AES), May 2010.
6. Chang, L., "Nonlinear Interaction of Atmospheric Tides and Planetary Waves in the Mesosphere and Lower Thermosphere", (AES), December 2010.
7. Pilinski, M., "Dynamic Gas-Surface Interaction Modeling for Satellite Aerodynamic Computations", (AES), December 2011.
8. Gerhardt, D., "Passive Magnetic Attitude Control for Cubesats", University of Colorado (AES), May 2014.
9. Weibel, D., "Improving the accuracy of in-situ lower ABL wind measurements using sUAS", University of Colorado (AES), August 2015.
10. Vaudrin, C., "New Observational and Modeling Techniques for Multistatic Specular Meteor Radar", University of Colorado (AES), May 2016.
11. Nguyen, V., "Global –Scale, Nonlinearly-Generated Waves in the Space-Atmosphere Interaction Region", University of Colorado (AES), December 2016.
12. Bradley, A., "Ice Formation in the Arctic Ocean: Observed Processes and Climate Feedbacks", University of Colorado (AES), December 2016.
13. Buck, S., "An Investigation into Wind Turbine Acoustic Noise Variability" (AES), May 2017.
14. Loucks, D., "Impact of High-Latitude Ionospheric E Region Enhancements on Global Positioning System Scintillations in the Alaskan Sector" (AES), May 2017.
15. Rainville, N., "Development of a Real Time Volcanic Ash Plume Receiver Network", University of Colorado (AES), August 2019.
16. Dahir, A., "Lost in Space: Autonomous Deep Space Navigation", University of Colorado (AES), May 2020.
17. VanBuren, D., "Techniques for Precise Timing Onboard Small Satellites", University of Colorado (AES), December 2020.
18. Wang, J., "Variability of the Migrating Diurnal Tide", University of Colorado (AES), December 2021.

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SUPERVISED DOCTORAL DISSERTATIONS

19. Schwab, B., "Solar X-ray Irradiance Variations: Instrument Design, CubeSat Mission Design, and Science Analysis of Solar Observations from Sounding Rocket and CubeSats", PhD August 2022.
20. Marino, J., "On the Development of a Multistatic Meteor Radar Network for Investigating Dynamics of the Upper Atmosphere, Meteor Science, and Space Weather", University of Colorado (AES), PhD, May 2024.
21. Wallace, B., "A Lunar Surface Pseudolite Architecture for Regional Communication and Radionavigation", University of Colorado (AES), PhD May 2024.

CURRENT PHD STUDENTS

1. Nell, N., working on NASA sounding rocket and CUTE Cubesat, PhD expected 2025. (Jointly advised with Professor Kevin France)
2. Fitzpatrick, D., working on satellite drag, PhD expected 2025. (Jointly advised with Dr. Eric Sutton)
3. Monaco, J., working on meteor radar, PhD expected 2027.
4. Zheng, M. working on DYNAGLO CubeSat, PhD expected 2028. (Jointly advised with Dr. Aimee Merkel)
5. Cuddeback, A.J., working on spectrum sensing, PhD expected 2028.
6. Jones, N., working thermosphere occultation measurements, PhD expected 2028. (Jointly advised with Dr. Ed Thiemann)
7. Marcusen, R., working on SWARM-EX CubeSat, PhD expected 2028.

SCOTT E. PALO

SUPERVISED MASTERS THESES

MASTERS THESES

1. Fernandez, A., "Engineering the Digital System for the Student Dust Counter", University of Colorado (ECE), 2004.
2. Williams, A., "Robust Satellite Thermal Control Using Forced Air Convection Thermal Switches for Operationally Responsive Space Missions", University of Colorado (AES), 2005.
3. Pisano, W., "Computationally Efficient Control Methods and Hardware for Autonomous Antenna Calibration", University of Colorado (AES), 2006.
4. Chang, L., "Analysis of the Migrating Diurnal Tide in the Whole Atmosphere Community Climate Model", University of Colorado (AES), 2006.
5. Rochester, L., "An FPGA Based Digital Radar for Meteor Radar Applications", University of Colorado (ECE), 2007.
6. Smith, L., "System Model of a UAV and Sensor Package for the Measurement of Sea Ice Freeboard, Roughness and Topography", University of Colorado (AES), 2007.
7. Johnson, K., "A Numerical Model for VHF Meteor Radar Systems", University of Colorado (AES), 2008.
8. Loucks, D., "The Communications and Systems Engineering for the Drag and Neutral Density Experiment", University of Colorado (AES), 2008.
9. Edwards, M., "Comprehensive Error Analysis and Integration of an Airborne Laser Profiling System for Arctic Sea Ice Freeboard Measurements", University of Colorado (AES), 2008.
10. Pilinski, M., "A Miniaturized Mass Spectrometer for Small Satellites", University of Colorado (AES), 2008.
11. Zainuddin, M., "COBRA Meteor Radar Antenna Designs", University of Colorado (ECE), 2009.
12. Simley, E., "Development of an Acoustic Array for Wind Turbine Aeroacoustic Noise Analysis", University of Colorado (ECE), 2010.
13. Dhakal, T., "Development of Dropsonde System for Antarctic Atmospheric Profiling", University of Colorado (AES), 2010.
14. Nguyen, V., "Estimating the Short Term Variability of the Migrating Diurnal Tide through Satellite Observations", University of Colorado (AES), 2011.
15. Estante, F., "Correlation Between the Non-migrating Semidiurnal Tide Observed at South Pole and Stationary Planetary Waves in the Northern Hemisphere", University of Colorado (AES), 2012.
16. Kemble, K., "Development of a Miniature Instrument for Measuring Velocity, Temperature and Composition in the Ionosphere and Thermosphere", University of Colorado (AES), 2013.
17. Truesdale, N., "Modular and Reusable Power System Design for the BRRISON Balloon Telescope", University of Colorado (AES), 2013.
18. Warshaw, L., "Design and Analysis of the Power System and Core Avionics for a Novel 6U CubeSat", University of Colorado (ECE), 2020.
19. Halferty, G., "Development, Fabrication, Integration, and Testing of the Spectroscopic Ultraviolet Multi-object Observatory (SUMO) Prototype", University of Colorado (AES), 2025.

SCOTT E. PALO

TEACHING

COURSES TAUGHT

SEMESTER	COURSE
Spring 1999	ASEN 3300, Aerospace Electronics and Communications
Fall 1999	ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor
Spring 2000	ASEN 3300, Aerospace Electronics and Communications ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Spring 2001	ASEN 3300, Aerospace Electronics and Communications ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Fall 2001	ASEN 4519/5519, Real-Time Data Acquisition ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor
Spring 2002	ASEN 3300, Aerospace Electronics and Communications ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Fall 2002	ASEN 5254, Radar and Remote Sensing ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor
Spring 2003	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Fall 2003	ASEN 4519/5519, Real-Time Data Acquisition ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor
Spring 2004	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Fall 2004	ASEN 4519/5519, Microcontroller Fundamentals with Aerospace Applications ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor
Spring 2005	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor
Fall 2005	ASEN 4018, Senior Projects I: Design Synthesis - Course co-coordinator ASEN 4519/5519, Microcontroller Fundamentals with Aerospace Applications
Spring 2006	ASEN 4028, Senior Projects II: Design Practicum - Course co-coordinator ASEN 4519, Introduction to Senior Projects ASEN 6210, Remote Sensing Seminar
Fall 2006	ASEN 4018, Senior Projects I: Design Synthesis - Course coordinator ASEN 4519/5519, Microcontroller Fundamentals with Aerospace Applications
Spring 2007	ASEN 4028, Senior Projects II: Design Practicum - Course coordinator ASEN 4519, Introduction to Senior Projects ASEN 5519, Space Hardware Design I – LAMA project
Fall 2007	ASEN 4018, Senior Projects I: Design Synthesis - Course coordinator ASEN 6519, Space Hardware Design II – LAMA project

COURSES TAUGHT

SEMESTER	COURSE
Spring 2008	ASEN 4028, Senior Projects II: Design Practicum - Course coordinator ASEN 5519, Space Hardware Design I – REPTile/FLIE project
Fall 2008	ASEN 4519/5519, Microcontroller Fundamentals with Aerospace Applications ASEN 6519, Space Hardware Design II – REPTile/FLIE project
Fall 2009	Sabbatical
Spring 2010	Sabbatical
Fall 2010	ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor ASEN 5018, Space Hardware Design I – CSSWE cubesat project
Spring 2011	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor ASEN 5254, Radar and Remote Sensing ASEN 5018/6028, Graduate Projects – CSSWE cubesat project
Fall 2011	ASEN 4519/5519, Microavionics ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor ASEN 5519/6519 – Astrodynamics Seminar ASEN 5018/6028, Graduate Projects – CSSWE cubesat project
Spring 2012	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor ASEN 5018, Graduate Projects – MinXSS cubesat project
Fall 2012	ASEN 4519/5519, Microavionics ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor ASEN 5018/6028, Graduate Projects – MinXSS cubesat project
Spring 2013	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor ASEN 5018/6028, Graduate Projects – MinXSS cubesat project
Fall 2013	ASEN 4018, Senior Projects I: Design Synthesis – Project Advisor ASEN 5018/6028, Graduate Projects – MinXSS cubesat project ASEN 5018, Graduate Projects – CUSP project
Spring 2014	ASEN 4028, Senior Projects II: Design Practicum – Project Advisor ASEN 5018, Graduate Projects – QB50 cubesat project ASEN 6028, Graduate Projects – CUSP project
Fall 2014	ASEN 5018/6028, Graduate Projects – QB50 cubesat project Course Reduction for Associate Dean Position
Spring 2015	ASEN 5018/6028, Graduate Projects – QB50 cubesat project Course Reduction for Associate Dean Position
Fall 2015	ASEN 5018/6028, Graduate Projects – QB50 cubesat project ASEN 5018/6028, Graduate Projects – CubeQuest cubesat project Course Reduction for Associate Dean Position

COURSES TAUGHT

SEMESTER	COURSE
Spring 2016	ASEN 5018/6028, Graduate Projects – QB50 cubesat project ASEN 5018/6028, Graduate Projects – CubeQuest cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project ASEN 5254, Radar and Remote Sensing Course Reduction for Associate Dean Position
Fall 2016	ASEN 5018/6028, Graduate Projects – Course Coordinator Course Reduction for Associate Dean Position
Spring 2017	ASEN 5018/6028, Graduate Projects – Course Coordinator Course Reduction for Associate Dean Position
Fall 2017	Reduced (50%) AY Appointment
Spring 2018	Reduced (50%) AY Appointment
Fall 2018	Sabbatical
Spring 2019	Sabbatical
Fall 2019	ASEN 3300, Aerospace Electronics (reduced 50 AY appointment)
Spring 2020	Entrepreneurial Fellows Fellowship ASEN 5254, Radar and Remote Sensing (Independent Study)
Fall 2020	ASEN 3300, Aerospace Electronics and Communications
Spring 2021	CubeSat Independent Study Research buyout for NSF Spectrum Innovation proposal
Fall 2021	ASEN 3300, Aerospace Electronics and Communications ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project CubeSat Independent Study
Spring 2021	ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director
Fall 2022	ASEN 3300, Aerospace Electronics and Communications ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project ASEN 5018/6028, Graduate Projects – RALPHIE cubesat project ASEN 5018/6028, Graduate Projects – CANVAS cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director

COURSES TAUGHT

SEMESTER	COURSE
Spring 2023	ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project ASEN 5018/6028, Graduate Projects – RALPHIE cubesat project ASEN 5018/6028, Graduate Projects – CANVAS cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director
Fall 2023	ASEN 3300, Aerospace Electronics and Communications ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project ASEN 5018/6028, Graduate Projects – RALPHIE cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director
Spring 2024	ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director
Fall 2024	ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director
Spring 2025	ASEN 3300, Aerospace Electronics and Communications ASEN 5018/6028, Graduate Projects – SWARM-EX cubesat project ASEN 5018/6028, Graduate Projects – MAXWELL cubesat project CubeSat Independent Study Research buyout for NSF SpectrumX Research Center Assoc. Director

SENIOR PROJECTS ADVISED

SEMESTERS	PROJECT
F99/S00	Fly by wireless
F01/S02	Tornadochasers UAV
F02/S03	Unmanned underwater vehicle (Hydrobuff) Tornadochasers UAV Drag free satellite
F03/S04	Camcube Remote aquatic vehicle
F04/S05	Heavy lift UAV (HAVUC) Skier location and performance experiment (SLOPE)
F10/S11	Telescopic high-definition earth imaging apparatus (THEIA) Extended range of versatile exploration rovers (XROVER)
F11/S12	Diurnal star tracking for balloon borne attitude determination (DAYSTAR) Sample targeting and retrieval rover (STARR)
F12/S13	Low Earth Orbit Project for the Acquisition and Recovery of Debris (LEOPARD) Auroral Camera for Exploring Space (ACES)
F13/S14	Telemetric Interplanetary Regolith Explorer for Seismic Investigation of Asteroid Surfaces (TIRESIAS) Signal Integrity Verifying Autonomous Quadrotor (SIVAQ)
F20/S21	Positioning for Lunar Observations (P4LO)
F21/S22	CubeSat Star Tracker (Cube-IST) *Team won 2 nd place at AIAA Region V student paper competition

INDEPENDENT STUDY STUDENTS ADVISED

NAME	SEMESTER	PROJECT
Mr. Mathew Smith (MS, ECE)	Spring 2000	Meteor array antenna modeling
Mr. Chris Eheim (BS, AES)	Spring 2002	UAV user interface
Mr. Cory Dixon (BS, AES)	Spring 2002	UAV avionics
Mr. Scott Miller (BS, AES)	Spring 2003	PIC microcontroller development
Mr. Thomas Bateman (BS, AES)	Spring 2004	Aircraft stability augmentation
Mr. William Pisano (BS, AES)	Spring 2004	PIC based helicopter controller
Mr. Dan Veronica (PhD, CEAE)	Spring 2004	Microcontroller based building control
Mr. Jason Durrie (BS, AES)	Spring 2005	Interfacing microcontroller to MMC memory
Mr. John Niece (BS, AES)	Spring 2005	Compact flash based data recorder
Mr. Tim Schilling (BS, AES)	Spring 2005	USB based data logger
Mr. Chris Bermel (BS, AES)	Fall 2007	Cosmic Reflectron for Isotopic Analysis
Mr. Colin Miller (BS, AES)	Fall 2007	Cosmic Reflectron for Isotopic Analysis
Ms. Brandi Casey (BS, AES)	Fall 2007	Cosmic Reflectron for Isotopic Analysis
Mr. J. Doug Bean (MS, AES)	F07/S08	Meteor Radar Software
Mr. Lee Jasper (MS, AES)	Fall 2009	DANDE Mission Operations Development
Mr. Michael Reher (BS, AES)	Fall 2009	Cubesat System Analysis
Mr. Lee Jasper (MS, AES)	Fall 2010	DANDE Mission Operations Development
Mr. Jake Binney (MS, AES)	S11/F11	SIMION particle simulations
Mr. Murali Nallamotheu (MS, ECE)	Spring 2011	Cubesat communications system
Ms. Lynn Kendrick (MS, ECE)	Fall 2011	Cubesat antenna simulation and test
Mr. Gabe LoDolce (MS, AES)	Spring 2012	MIZOPEX sonde embedded system
Mr. Chris Bergner (MS, ECE)	Summer 2012	GPS disciplined oscillator
Mr. Jacob Cook (MS, ECE)	Summer 2013	Cubesat attitude control system
Mr. John Bullock (BS, ECE)	Spring 2014	CUSP project software development
Ms. Alice Bradley (PhD, AES)	Spring 2014	Sea Ice processes
Mr. David Hall (MS, AES)	Summer 2014	Cubesat systems and testing
Ms. Megan Scheele (MS, AES)	Summer 2014	Cubesat thermal and mechanical system
Mr. Sujit Nandkumar (MS, ECE)	Spring 2015	QB50 Cubesat CDH software
Mr. Nick Rainville (PhD, AES)	Spring 2015	QB50 Cubesat ADCS software
Mr. Andrew Dahir (PhD, AES)	Spring 2015	QB50 Cubesat Solar Cells

INDEPENDENT STUDY STUDENTS ADVISED - CONTINUED

NAME	SEMESTER	PROJECT
Mr. Nicholas Nell (MS, ECE)	Spring 2015	QB50 CubeSat CDH slotOS software
Mr. Swapnil Paratey (MS, ECE)	Spring 2015	QB50 CubeSat CDH-ADCS interface
Mr. Gaurav Shukla (MS, ECE)	Spring 2015	QB50 CubeSat CDH software
Mr. John Sobtzak (MS, ECE)	Spring 2015	QB50 CubeSat antenna design
Mr. John Stark (MS, ECE)	Summer 2015	QB50 CubeSat electronics design and test
Mr. Swapnil Paratey (MS, ECE)	Summer 2015	QB50 CubeSat CDH-ADCS interface
Mr. John Sobtzak (MS, ECE)	Summer 2015	QB50 CubeSat COM design
Mr. Nick Rainville (PhD, AES)	Fall 2015	QB50 CubeSat ADCS software
Mr. Andrew Dahir (PhD, AES)	Fall 2015	QB50 CubeSat Project Manager
Mr. Nicholas Nell (MS, ECE)	Fall 2015	QB50 CubeSat CDH slotOS software
Mr. Andre Lucas Antunes De Sa (PhD, AES)	Spring 2016	QB50 ADCS simulation
Mr. Akash Baskar (MS, ECE)	Spring 2016	Software defined radio
Mr. Alex Forsman (MS, AES)	Summer 2016	CU-E3 CubeSat project management
Mr. Robert Kane (MS, ME)	Summer 2016	CU-E3 CubeSat mechanical design
Mr. Brett Shaffer (MS, AES)	Summer 2016	MAXWELL CubeSat PDR
Mr. Andrei Iskra (BS, AES)	Fall 2016	CU-E3 CubeSat mechanical fabrication
Mr. Andre Lucas Antunes De Sa (PhD, AES)	Fall 2016	QB50 ADCS algorithms
Mr. Colden Rouleau (PhD, AES)	Fall 2016	MAXWELL CubeSat CDH design
Mr. Colden Rouleau (PhD, AES)	Spring 2017	MAXWELL CubeSat CDH design
Mr. Maurice Woods (MS, AES)	Summer 2017	MAXWELL CubeSat CDH design
Mr. Ben Fried (MS, AES)	Summer 2017	CU-E3 CubeSat CDH design
Mr. Robert Swartz (MS, AES)	Summer 2017	CU-E3 CubeSat CDH design
Mr. Charles Gillard (MS, AES)	Spring 2019	CU-E3 CubeSat Project Management
Mr. Chris Harnack (MS, AES)	Spring 2019	CU-E3 CubeSat Thermal Analysis
Mr. Gabe Altman (BS, ECE)	Spring 2019	CU-E3 CubeSat RF Receive Chain
Mr. Adam Nuhaily (MS, AES)	Spring 2019	Development of STM32 for NOAA buoy
Mr. Wesley Caruso (BS, AES)	Spring 2019	Testing of CU-E3 CubeSat hardware
Mr. Gregory Vorontsov (MS, AES)	Summer 2019	CU-E3 CubeSat Safety Documentation for NASA
Mr. Brodie Wallace (PhD, AES)	Fall 2019	CU-E3 CubeSat Project Management
Mr. Ryan Swanson (BS, ECE)	Fall 2019	MAXWELL CubeSat S-band receiver
Ms. Anantara Prakash (MS, AES)	Fall 2019	MAXWELL CubeSat EPS system

INDEPENDENT STUDY STUDENTS ADVISED - CONTINUED

NAME	SEMESTER	PROJECT
Mr. Vikas Nataraja (MS, AES)	Fall 2019	MAXWELL CubeSat ADCS system
Mr. Ryan Swanson (BS, ECE)	Spring 2020	MAXWELL CubeSat S-band receiver
Mr. Evan Bauch (MS, AES)	Spring 2020	Radar and Remote Sensing
Mr. Collin Sullivan (MS, AES)	Spring 2020	Radar and Remote Sensing
Mr. Nitik Gupta (MS, ECE)	Spring 2020	MAXWELL CubeSat EPS system
Mr. Pavan Shiralagi (MS, ECE)	Spring 2020	MAXWELL CubeSat CDH system
Mr. Nelson Rodriguez (MS, ECE)	Fall 2020	MAXWELL CubeSat EPS system
Mr. Donovan Harshfield (BS, AES)	Spring 2021	CU-E3 CubeSat Communications Testing
Ms. Chari Shrivatsan (MS, AESO)	Spring 2021	MAXWELL CubeSat ADCS system
Mr. Nelson Rodriguez (MS, ECE)	Spring 2021	MAXWELL CubeSat EPS system
Ms. Lara Lufkin (MS, AES)	Spring 2021	CU-E3 CubeSat System Testing
Mr. Fernando Chavez (BS, AES)	Summer 2021	Electronics
Mr. Kyle Johnson (MS, AES)	Fall 2021	ENTICE Satellite Mission Simulation
Mr. Kyle Johnson (MS, AES)	Spring 2022	ENTICE Satellite Mission Simulation
Mr. Lucio Murillo (BS, AES)	Spring 2022	MAXWELL CubeSat Systems Engineer
Ms. Zoe Lee (MS, AES)	Summer 2022	MAXWELL and RALPHIE CubeSat Structures system
Mr. Blake Wilson (BS, AES)	Fall 2022	MAXWELL and RALPHIE CubeSat Structures system
Ms. Visalakshmi Chemudupati (MS, ECE)	Fall 2022	MAXWELL CubeSat Software Development
Mr. Sricharan Kidambi (MS, ECE)	Fall 2022	RALPHIE CubeSat CDH Design
	Spring 2023	
	Fall 2023	
	Spring 2024	
	Fall 2024	
	Spring 2025	

MENTORED UNDERGRADUATE STUDENTS

NAME	DATES	PROJECT
Mr. Mike Kionka (BS, ECE)	1998-2000	Schematic capture and construction of meteor radar hardware
Mr. Scott Miller (BS, AES)	2003	Microcontroller development
Mr. Tyler Lewis (BS, AES)	2005	GPS receiver testing
Mr. Zach Eichmeyer (BS, AES & ECE)	2004-2006	Schematic capture and mechanical design
Mr. Zhuo Jing (BS, ECE)	2006-2007	Radar Receiver testing
Mr. Travis Schafhausen (BS, AES & ECE)	2006-2007	Mechanical design and construction, schematic capture
Ms. Samantha Krenning (BS, AES)	2008	Meteor radar application software
Mr. J. Michael Gordon (BS, AES)	2009	Data acquisition software development
Mr. Bruce Chen (BS, ECE)	2010-2011	Data visualization (DLA)
Mr. Nick Truesdale (BS, AES)	2012	Mentor Graphics (Earn Learn)
Mr. Austin Cerny (BS, AES)	2012-2013	Cubesat antenna deployment design (DLA)
Mr. Thomas Waters (BS, ME)	2013-2014	Cubesat mechanical design (DLA)
Ms. Alexandra Hickey (BS, ME)	2014-2016	Cubesat mission design (Work Study)
Mr. Jeffrey Fukushima (BS, ME)	2014-2015	QB50 Cubesat software (DLA)
Mr. Aaron Abouf (BS, AES)	2016-2017	Maxwell Cubesat structural design (DLA)
Mr. Kyle Wislinsky (BS, ECEE)	2017-2018	CU-E3 Cubesat RF component design (DLA)
Mr. Matt Zola (BS, AES)	2018-2019	Maxwell Cubesat structural design (DLA)
Mr. Decaln Murray (BS, AES)	2019-2020	CU-E3 Cubesat testing (DLA)
Mr. Bailey Roker (BS, AES)	2019-2020	Maxwell Cubesat integration and testing (DLA)
Ms. Chava Freidman (BS, AES)	2020-2021	Maxwell Cubesat solar panel design and testing (DLA)
Ms. Anna Glass (BS, CS)	Fall 2021	Distributed meteor radar software development (DLA)
Mr. Tyler Curnow (BS, CS)	2021-2022	Distributed meteor radar hardware development (DLA)
Mr. Blake Wilson (BS, AES)	2021-2022	MAXWELL Cubesat structures development (DLA)
Mr. Tanvir Abulkalam (BS, AES)	Fall 2021	SWARM-EX CubeSat mission design (DLA)

MENTORED UNDERGRADUATE STUDENTS - CONTINUED

NAME	DATES	PROJECT
Ms. Julia DiTomas	2022-2023	Lunar Position, Navigation, Timing and Communication System (DLA)
Mr. Jacob Ecks	2022-2023	Distributed Meteor Radar (DLA)
Mr. Preston Brumley	2022-2023	SWARM-EX CubeSat GPS design (DLA)
	2024-2025	
	2024-2025	
	2024-2025	

SCOTT E. PALO SERVICE

Service – National and International

- American Institute of Aeronautics and Astronautics (AIAA) SciTech Conference
 - 2019-2022 - Executive Steering Committee
 - 2020-2022 - Technical Committee
 - 2020-2023 - Small Satellite Technical Chair
- American Institute of Aeronautics and Astronautics (AIAA) ASCEND Conference
 - 2019-2022 - Technical Committee
 - 2019-2023 - Small Satellite Technical Chair
- American Institute of Aeronautics and Astronautics (AIAA) Public Policy Committee
 - 2021-present - Programming subcommittee co-chair
 - 2015-present - Member
 - 2019-2021 - Honors and Awards subcommittee co-chair
- American Institute of Aeronautics and Astronautics (AIAA) Small Satellite Technical Committee
 - 2013-present - Member
 - 2020-present - Conference subcommittee Chair
 - 2018-2021 - Chair
 - 2013-2021 - Executive Steering Committee
 - 2016-2018 - Vice Chair
 - 2013-2016 - Web Master
- National Science Foundation (NSF)
 - 2020-present - Advanced Incoherent Scatter Radar Advisory Committee
 - 2018 – Antarctic Artists & Writers Program Review Panel
 - 2009-2012 - South Pole Users Committee (SPUC)
 - 2007 - Space Weather Program Review Panel
 - 2004 - Energetics and Dynamics (CEDAR) Program Review Panel
 - 2001 - Relocatable Optical and Radiowave Measurement Techniques Workshop steering committee
- National Aeronautics and Space Administration (NASA)
 - 2020 - Matisse Planetary Instrument Review Panel
 - 2010 - Heliophysics Review Panel
- Colorado Space Business Roundtable (CSBR)
 - 2015-2017 - Board of Directors
- QB50 “An international network of 50 CubeSats for multi-point, in-situ measurements in the lower thermosphere and re-entry research”
 - 2010-2017 - Executive Committee
 - 2010-2012 - Sensor Selection Working Group
- Sensors Journal (ISSN 1424-8220; 5-year impact factor 2.474)
 - 2015-2016 - Editor
- International Journal of Engineering Education
 - 2012-2013 - Guest Editor : Special Issue on Capstone Design, vol 30-1
 - 2010-2011 - Guest Editor : Special Issue on Capstone Design, vol 27-6

- ICSU Committee on Space Research (COSPAR) Chairman, subcommission C-2, The Earth's middle atmosphere and lower ionosphere, 2006-2014
- ICSU Scientific Committee on Antarctic Research (SCAR)
 - 2007-2009 - Chair Pan-Antarctic Observing System action group
 - 2004-2009 - Co-chair ICESTAR thematic group C
- ICSU Scientific Committee on Solar Terrestrial Research (SCOSTEP)
 - 2004-2008 - Climate and Weather of the Sun-Earth System (CAWSES), Atmospheric Coupling project coordinator
- ICSU Committee on Space Research (COSPAR)
 - 2002-2006 - Vice Chairman, subcommission C-2, The Earth's middle atmosphere and lower ionosphere
- National Academy of Science
 - 2004-2006 - Polar Research Board committee on Designing an Arctic Observing Network,
 - 2004 - Committee on Distributed Arrays of Small Instruments (DASI) for Research and Monitoring in Solar-Terrestrial Physics
- Department of Energy (DOE)
 - 2005 - external review committee for Los Alamos National Laboratory Deployable Adaptive Processing Systems (DAPS) program
- Barrow Arctic Sciences Consortium
 - 2001-2003 - Science Advisory Group

Service – College and Campus

- University of Colorado
 - 2024-2025 – Laboratory of Atmospheric and Space Physics – Directors Search
 - 2019-2022 - National Security Working Group
 - 2019-2021 - Dean's Search Committee
 - 2013-2017 - Institute Directors Council
 - 2016-2017-Co-Chair, Laboratory for Atmospheric Physics (LASP Academic Review and Planning Advisory Committee (ARPAC)
 - 2014-2017 – Vice Chancellor for Research, Advisory Board
 - 2014-2017 – Vice Chancellor for Research, Research Review Board
 - 2011-2016 - Faculty Information Technology Advisory Committee
 - 2013-2014 - Chancellor's Grand Challenge Steering Committee
 - 2013-2014 - Federal Relations Advisory Council
 - 2010-2014 - Graduate School External Advisory Committee (EAC)
 - 2012-2013 – Office of Information Technology (OIT) Spaces Study Committee
 - 2012-2013 - Emerging Leaders Program
 - 2010-2011 - Committee for Associate Director of Academic Technology
 - 2008-2013 - Coordinator for Platteville Colorado research site
- College of Engineering (CEAS)
 - 2021-2023 – Distinguished Engineering Alumni Awards Selection Committee
 - 2019-2021 - CEAS Max Peters Service Award Selection Committee
 - 2014-2017 - Associate Dean for Research
 - 2014-2017 - Graduate Education Council (GEC)

- 2014-2017- Dean's Cabinet
- 2014-2017 - Chair, College of Engineering Faculty Research Board
- 2014 - Coordinator for Research Opportunities Position Search Chair
- 2011-2014 - Undergraduate Education Council (UEC)
- 2006-2007 - Faculty Leadership Advancement Group
- 2006 - Internal Reviewer for the Colorado Space Grant Consortium
- 2001-2002 - Faculty Advisor for the Multicultural Engineering Program Fall Fling
- 2002 - Chair, University of Colorado Multicultural Engineering Program associate chair search committee

Service – Aerospace Engineering Sciences (AES)

- Primary Unit Evaluation Committee (PUEC) for Research Professor Keith Gremban, 2024-2025
- Instructor Chris Koehler Mentoring Committee, 2022-present
- Performance Evaluation Committee, 2019-present
- Chair, Roof Committee, 2019-2024
- Professor Allie Anderson Mentoring Committee, 2017-2024
- Executive Committee, 2012-2021
- Primary Unit Evaluation Committee (PUEC) for Professor Zoltan Sternovsky, 2021-2022
- Primary Unit Evaluation Committee (PUEC) for Dr. Christopher Williams, 2021-2022
- Primary Unit Evaluation Committee (PUEC) for Professor Jay McMahon, 2020-2021
- AES Strategic Vision Committee, 2019-2020
- Primary Unit Evaluation Committee (PUEC) for Professor Eric Frew, 2017-2018
- Primary Unit Evaluation Committee (PUEC) for Professor Dennis Akos, 2016-2017
- Faculty search committee 2014-2017
- Chair, Instructor Search Committee, 2015-2016
- Professor Zoltan Sternovsky Mentoring Committee, 2009-2016
- Aerospace Ventures Committee, 2013-2015
- Associate Chair for Undergraduate Studies, 2011-2014
- Chair, Undergraduate committee 2011-2014
- Building, Architecture and Program Plan Committee, 2013-2014
- Graduate Committee, 2013-2014
- Primary Unit Evaluation Committee (PUEC) for Professor Jeff Thayer, 2011-2012
- Primary Unit Evaluation Committee (PUEC) for Dr. Jim Maslanik, 2011-2012
- Focus Area Lead for Astrodynamics and Satellite Navigation, 2011-2012
- Chair, Instructor Search Committee, 2011-2012
- Chair Facilities committee 2011-2012
- Facilities committee 2010-2011
- Primary Unit Evaluation Committee (PUEC) for Professor Ryan Starkey 2010-2011
- Focus Area Lead for Remote Sensing Earth and Space Science, 2010-2011
- Mr. Joe Tanner Mentoring Committee, 2008-2012
- Graduate Committee, 2010-2012
- Fundraising Committee, 2009-2012
- Chair, Senior Projects Committee, 2006-2007

- Chair, CDIO Committee, 2006-2007
- Space Initiative Committee, 2006-2007
- Building Study Feasibility Committee, 2006-2007
- Colorado Center for Astrodynamics Research IT Committee, 2005-2007
- Co-Chair, Senior Projects Committee, 2005-2006
- Chair, KD Wood Colloquium Committee, 2005-2006
- Graduate Program Restructuring Committee, 200-32005
- Senior Projects Committee, 2002-2004
- LASP Cooperation Committee, 2002-2004
- Undergraduate Education Committee, 2003-2005
- Shop Committee, 2002-2003
- Co-Mentor for the National Center for Atmospheric Research (NCAR) Significant Opportunities in Atmospheric Research and Science (SOARS) Program (1996,1998,1999).
- Organized and directed Space Sciences Day at the CU Minority Engineering Program Exploring Engineering Institute, June 12-15, 1998.

Service – Conferences and Workshops

- American Astronautical Society (AAS) Guidance Navigation and Control Conference
 - 2018-present – Small Satellite Session National Chair
- American Astronautical Society (AAS) International Space Station Utilization Committee
 - 2013-2022 – Technical Committee
- European CubeSat Conference
 - 2012-2016 – Organizing Committee
 - 2015 Session Chair, London, England
 - 2014 Session Chair, Estavayer-le-lac, Switzerland
- National Capstone Conference
 - 2007-2010 - Co-Chair National Capstone Design Conference
 - 2006-2016 – Executive organizing and program committee
- AIAA Small Satellite Conference
 - 2009 Session Chair, Logan, UT
- American Institute of Aeronautics and Astronautics Rocky Mountain Symposium
 - 2016 - Invited panelist: Political Influences on the Colorado Aerospace Economy Panel
 - 2015 - Invited panelist: Education and Industry Panel, 2015
- International Union of Geodesy and Geophysics (IUGG)
 - 2007 - Chaired a session at the XXIV General Assembly of the International Union of Geodesy and Geophysics, Perugia Italy
- ICSU Committee on Space Research (COSPAR)
 - 2006 - Main Scientific Organizer for a session entitled “Meteor Science and Techniques: Composition, Sources, Sinks and Global Distribution of Meteoric Metals”, at the 36th COSPAR scientific assembly, Beijing, China
 - 2002 - Deputy scientific organizer for session C2.3 “The non-zonal structures in the middle atmosphere and lower-thermosphere” at the 34th COSPAR scientific assembly, Houston TX
- National Science Foundation (NSF) CEDAR Conference

- 2005 - Organized and convened a workshop on TIMED/CEDAR Collaborative Atmospheric Dynamics, Santa Fe NM
- 2005 - Organized, convened, and chaired a workshop on Mesosphere and Lower Thermosphere Zonal Mean and Wave Variabilities, Santa Fe NM
- 2004 - Organized, convened, and chaired a workshop on Polar Mesospheric and Lower/Thermospheric Dynamics, Santa Fe NM
- 2003 - Organized, convened, and chaired a workshop on TIMED science and validation, Longmont CO
- 2000 - Organized and convened a measurement intercomparison workshop, Boulder CO
- 1998 - Organized, convened and edited a report for the Large-Scale Waves and Dynamics Working Group at the second NASA/NSF sponsored TIMED/CEDAR workshop
- 1996- Organized and convened data analysis workshop, Boulder CO, June 1996.
- American Geophysical Union (AGU)
 - 2005 - Organized, convened, and chaired a session entitled “Emerging Technology for Environmental Sensor Networks I”, at the American Geophysical Union meeting, San Francisco, CA
 - 2005 - Organized, convened, and chaired a session entitled “Mesosphere and Lower Thermosphere; Energetics and Dynamics Posters”, at the American Geophysical Union meeting, San Francisco, CA
 - 2000 - Organized, convened, and chaired a session entitled “The Mesosphere/Lower Thermosphere Region: Structure, Dynamics, Composition and Emission”
- Sponsored, organized and convened a workshop on Antarctic mesosphere and lower thermosphere wind and temperature observations, Sep 26-29, 2005, Hobart, Tasmania.
- Chaired a session at the IAGA/ICMA workshop on Vertical Coupling in the Atmosphere/Ionosphere System, Bath UK, July 2004.
- Sponsored, organized and convened a workshop on radar MLT measurement techniques, June 12 & 13, 2003, University of Colorado, Boulder CO.
- ICSU International Union of Radio Scientists (URSI) National Radio Science meeting
 - 2001 - Technical committee
 - 2001 - Steering committee

Reviewer for:

Advances in Space Research
 Annales Geophysicae
 Earth, Planets and Space
 Geophysical Research Letters
 Geomagnetism and Aeronomy International
 Journal of Geophysical Research - Space Physics
 Journal of Geophysical Research - Atmospheres
 Journal of Atmospheric and Solar-Terrestrial Physics
 National Capstone Design Conference
 National Science Foundation
 NASA
 Radio Science
 Sensors Journal
 U.S. Civilian Research and Defense Organization

SCOTT E. PALO

PRESENTATIONS

INVITED PRESENTATIONS

1. Palo, S.E., "SpectrumX Center Overview, Update and Community Engagement", NSF Spectrum Week Meeting, Washington DC, May 2024.
2. Palo S., "Sampling, Aliasing and Musings on Multi-Satellite Analysis", NSF CEDAR Meeting, San Diego, CA, Jun. 2024.
3. Palo, S.E., Evolving Spectrum-Sharing Regulation through Data-, Science- and Technology-Drive Analysis and Decision-Making, panel on Industry Lessons Learned from Spectrum Sharing, Jun., 2022, Virtual.
4. Palo, S.E. Leveraging Commercial Space or Earth and Ocean Remote Sensing: A Dissemination Workshop, Panel on Infrastructure and Technology Needs to Service and Emergent User Community", Jun., 2022, Washington DC.
5. Palo, S.E., "Emerging Aerospace Platforms: A Disruptive Technology", United States Telecommunications Training Institute, Boulder, CO, Jun. 2019.
6. Palo, S.E., "So you want to build a CubeSat ... with students, Really?", 15th Annual International Planetary Probe Workshop, Boulder, CO, Jun. 2018.
7. Palo, S.E. "The Rise of Small Satellites and the Potential Scientific Impact", Invited Seminar, Boston University, Oct., 2017.
8. Palo, S.E., "Using a Constellation of CubeSats to Conduct Thermospheric Science: The QB50 Mission", Invited Plenary Speaker, NSF Coupling, Energetics and Dynamics Workshop, Keystone, CO, Jun., 2017.
9. De Boer, G., M. Shupe, A. McComiskey, J. Creamean, C.R. Williams, S.Y. Matrosov, A. Solomon, D. Turner, M. Norgren, M. Maahn, D. Lawrence, B. Argrow. S.E. Palo, D. Weibel, N. Curry, T. Nichols, P. D'Amore and W. Finamore", Recent Observational Efforts Using the DOE ARM Observatory at Oliktok Point, Alaska", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
10. Palo, S.E., "Some Thoughts on Gnu and Software Defined Radio", GnuRadio Conference, Boulder Colorado, September 2016 (Keynote Speaker).
11. Palo, S.E., "A Very Incomplete History of Meteor Radar with a Focus on Winds", Multistatic Meteor Radar Workshop, Kuhlungsborn, Germany, June 2016.
12. Li, X., T. Woods, S.E. Palo, J. Mason and R. Kohnert, "Generations of CubeSat in University of Colorado to Address Heliospheric Physics", 2015 Asia-Oceania Geosciences Society (AOGS) Meeting, Singapore, Aug. 2015.
13. Palo, S.E., "So you want to build a CubeSat?" Smead Symposium, Vail CO, May 2015.
14. Palo, S.E., "Using Small Satellites to Conduct Space Physics Research", Leibnitz Institute for Atmospheric Physics, Kuhlingsborn Germany, Oct. 2014.
15. Palo, S.E., X. Li, D. Gerhard, L. Blum, Q. Schiller and R. Kohnert, On-Orbit Performance of the Colorado Space Weather Experiment (CSSWE)", 224th American Astronomical Society Meeting, Boston, MA, May., 2014.
16. Li, X., S.E. Palo, et al., "Colorado Student Space Weather Experiment (CSSWE) CubeSat Mission: A Success in Education, Engineering, and Science", NSF GEM workshop, Snowmass, Colorado, Jun. 2013.
17. Li, X., S.E. Palo, et al., "New results from the Colorado CubeSat and comparison with Van Allen Probes data", AGU Meeting of Americas, Cancun, Mexico, May 2013.

18. Li, X., S.E. Palo, et al., "First Results from Colorado Student Space Weather Experiment (CSSWE): Energetic Particle Distribution in Near Earth Environment", Space Weather Week Meeting, Boulder, Colorado, Apr. 2013.
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CONTRIBUTED PRESENTATIONS

1. Merkel, A.W., S. Palo, S. Vadas, N.M. Pedatella, M. Jones Jr., R. Eastes, B.J. Harding, E. Becker, R.S. Lieberman, L. Qian, M. Dhadly, Q. Gan, C.Y. Cullens, X. Lu, J. Huba, J.S. Evans, W.E. McClintock, S.A. Budzien, G. Holsclaw and M.H. Stevens, "The low-risk high-impact DAPHNE mission – A DYNAMIC mission concept", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
2. Zheng¹, M., A.W. Merkel, B.A. Fritz, S.E. Palo, S.A. Budzien and K. Dymond, "Investigating if Traveling Atmospheric Disturbances (TADs) Can Be Detected in Variable Voltage Ion Protection Experiment (VVIPRE) Data", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
3. Dawkins, E.C.M., D. Janches, G. Stober, J.D. Carrillo-Sánchez, R.S. Lieberman, C. Jacobi, T. Moffat-Griffin, N.J. Mitchell, N. Cobbett, P.P. Batista, V.F. Andrioli, R.A. Buriti, D.J. Murphy, J. Kero, N. Gulbrandsen, M. Tsutsumi, A. Kozlovsky, M. Lester, J-H. Kim, C. Lee, A. Liu, B. Fuller, D. O'Connor, S.E. Palo, M.J. Taylor, J. Marino, N. Rainville "Seasonal and Local Time Variation in the Observed Peak of the Meteor Altitude Distributions by Meteor Radars.", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
4. Monaco¹, J., J. Marino and S.E. Palo, "Quantifying Relative Performance of Increasingly Separated Specular Meteor Radars via Monte Carlo Simulation ", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
5. Fitzpatrick¹, D., E.K. Sutton, M. Pilisnki and S.E. Palo, "Harnessing Signals of Opportunity from the Starlink Constellation for Enhanced Thermospheric Density Specification", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
6. Caspi, A., P. Athiray, W. Barnes, M. Cheung, Chhabra, S., C. DeForest, S. Gburek, M. Hanson, J.M. Hughes, V. Klein, J.A. Klimchuk, M. Kowaliński, D. Lamb, G.T. Laurent, J.P. Mason, B. Mondal, T. Mrozek, S.E. Palo, J.D. Parker, B. Schwab, M. Schattenburg, D.B. Seaton, A.Y. Shih, M. Steslicki, J. Sylwester, H. Warren, and T.N. Woods, "CubeSat Imaging X-ray Solar Spectrometer (CubIXSS): science motivation and current development status for a new 16U mission to understand heating of coronal plasma in solar flares and active regions", American Geophysical Union Fall Meeting, Washington, DC, Dec., 2024.
7. Caspi, A., P. Athiray, W. Barnes, M. Cheung, C. DeForest, S. Gburek, J.M. Hughes, V. Klein, J.A. Klimchuk, M. Kowaliński, G.T. Laurent, J.P. Mason, B. Mondal, T. Mrozek, S.E. Palo, J.D. Parker, B. Schwab, M. Schattenburg, D.B. Seaton, A.Y. Shih, M. Steslicki, J. Sylwester, H. Warren, and T.N. Woods, "The CubeSat Imaging X-ray Solar Spectrometer (CubIXSS): science and current status of implementation for a new mission to understand heating of coronal plasma", Triennial Earth-Sun Summit 2024.
8. Cuddeback¹, A.J. and S.E. Palo, "Correlating NEXRAD Data with Electromagnetic Propagation Data", NSF SpectrumX Fall Meeting, Los Angeles CA, October 2024.
9. Palo, S.E., "SpectrumX Center Updates and Plans", SpectrumX Fall Meeting, Los Angeles CA, October 2024.
10. Monaco¹, J., J. Marino, N. Rainville and S. Palo, "Next Steps in the Development of the Zephyr Multistatic Meteor Radar in Colorado", 16th International Workshop on Technical and Scientific Aspects of iMST Radar and Lidar (MST16/iMST3), Sept 9-13, 2024, Rostock Germany.
11. Zheng¹, M., A. Merkel, and S. Palo, "Tomographic retrieval of thermosphere gravity waves from the Far Ultraviolet Imager (FUVI) on the future DYNAGLO CubeSat mission," NSF CEDAR Meeting, San Diego, CA, Jun. 2024.

12. Monaco¹, J., J. Marino, and S. Palo, "Zonal Specular Meteor Radar Binning A Method for Observing Atmospheric Wave Direction with a Single Monostatic SMR", NSF CEDAR Meeting, San Diego, CA, Jun. 2024.
13. Fitzpatrick¹, D., R. Bishop, M. Pilinski, and S. Palo, "Advancing Thermospheric Density Quantification: Applying Energy Dissipation Rate GNSS Accelerometry to the Eccentric C/NOFS Satellite", NSF CEDAR Meeting, San Diego, CA, Jun. 2024.
14. Cuddeback¹, A.J. and S.E. Palo, "Codebase for Automated Software-Defined Radio Calibration", NSF Spectrum Week, Washington DC, May 2024.
15. Monaco¹, J., J. Marino, and S.E. Palo, "Novel Binning of Monostatic Specular Meteor Radar Echoes for Improved Observation of Zonal Atmospheric Waves", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2023.
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20. Rainville, N., J. Marino, and S.E. Palo, "Initial Calibration and Operation of the Colorado Zephyr Meteor Radar Network", URSI National Radio Science Meeting, Jan. 2023.
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24. Palo, S.E., N. Rainville, R. Redfern, B. Roker, D. Fitzpatrick, K. Yevak and M. Patel, "The MAXWELL Cubesat, AIAA Rocky Mountain Section Annual Technical Symposium, Boulder, CO, Sep. 2022.
25. Palo, S.E., N. Rainville, A. Zara, M. Patel and K. Yevak, "The MAXWELL CubeSat Attitude Determination and Control System", AIAA Rocky Mountain Section Annual Technical Symposium, Boulder, CO, Sep. 2022.

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31. Axelrad, P., D. Akos, J. Morton, S. Palo, R. Kingsbury, B. Breitsch, H. Bourne, S. Taylor, M. Dobbin, L. Scott, "On Demand PNT (OD-PNT)," Joint Navigation Conference (JNC) 2022, San Diego, CA, June 2022.
32. Buynovskiy¹, A., J.P. Thayer, M.D., Pilinski, E.K. Sutton, S.E. Palo, "Characterizing High-Resolution Temporal and Spatial Changes of the EIA and ETA ", National Science Foundation Coupling Energetics and Dynamics of Atmospheric Regions meeting, Austin, TX, June 2022,
33. Palo, S.E., R.W. Kingsbury and J.C. Twichell, "Low-SWaP Optical Crosslinks with Cobalt", CubeSat Developers Workshop (CDW), San Luis Obispo CA, Apr. 2022.
34. Lisy¹, C., L. Hu, B. Oh, A. Kriezis, W.Q. Lohmeyer, S. Palo, "CubeSat Hinge Design and Analysis for Dual Deployable Solar Panels", 19th Annual CubeSat Developers Workshop (CDW), San Luis Obispo CA, Apr. 2022.
35. Oh¹, B., C. Lisy, G. Tran, S. Palo, and W.Q. Lohmeyer, "Analysis of Single Event Effects in Small Satellites", 19th Annual CubeSat Developers Workshop (CDW), San Luis Obispo CA, Apr. 2022.
36. Jiang, J., K. Johnson, Q. Yue, and S. Palo, "ENTICE Satellite Orbital Simulator Enhanced with ARTS", EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-3315, <https://doi.org/10.5194/egusphere-egu22-3315>.
37. Wang¹, J., S. Palo, and J. Marino, "High latitude secondary waves generating from traveling planetary waves during the 2019 Southern Hemisphere sudden stratospheric warming", AGU Fall Meeting, 2021.
38. Axelrad, P., D. Akos, J. Morton, S. Palo, R. Kingsbury and L. Scott, "On Demand Positioning, Navigation, and Timing (OD-PNT), ION Joint Navigation Conference, Covington, Kentucky, 2021.
39. Wang¹, J., S. Palo, J. Forbes, J. Marino, T. Moffat-Griffin, "Burst of Unusual Quasi-10 day Wave During the 2019 Southern Sudden Stratospheric Warming", EGU General Assembly, EGU21-296 10.5194/egusphere-egu21-296, 2021.
40. Reid, R.A., R.A. Marshall, S.E. Palo and D.M. Malaspina, "A Compact Five-Channel VLF Wave Receiver for CubeSat Missions", Small Satellite Conference, virtual, Aug. 2021.
41. Agarwal¹, R., B. Oh, D. Fitzpatrick, A. Buynovskiy, S. Lowe, C. Lisy, A. Kriezis, B. Lan, Z. Lee, A. Thomas, B. Wallace, E. Costantino, G. Miner, J. Thayer, S. D'Amico, K. Lemmer, W. Lohmeyer and S. Palo, "Coordinating Development of the SWARM-EX CubeSat Swarm Across Multiple Institutions", Small Satellite Conference, virtual, Aug. 2021.

42. Wang¹, J., S. Palo, J. Forbes, J. Marino and T. Moffat-Griffin, "Unusual Quasi-10-day Waves and Ionospheric Responses During the 2019 Southern Hemisphere Sudden Stratospheric Warming", 18th Annual AOGS2021 Meeting, virtual, Aug. 2021.
43. Buynovskiy¹, A., D. Fitzpatrick, Z. Lee, S. Palo. J. Thayer and M. Pilinski, "Resolving the Spatial/Temporal Ambiguity of the EIA and ETA Using a LEO CubeSat Swarm Configuration", NSF CEDAR Meeting, virtual, Jun. 2021.
44. Wang¹, J., and S. Palo, "Numerical study to uncover the driving mechanisms of the migrating diurnal tide day-to-day variability", NSF CEDAR Meeting, virtual, Jun. 2021.
45. Kingsbury, R., J. Twichell and S. Palo, "Cobalt Optical Crosslink Transceiver for SWaP-constrained Missions", CubeSat Developers Workshop, virtual, Apr. 2021.
46. Mubasshir¹, M. B. Wallace, S. Latif, and S. Palo, "A Circularly-Polarized X-band Patch Array Antenna with Corporate Feeding for CubeSats", CubeSat Developers Workshop, virtual, Apr. 2021.
47. Thomas, A., K. Lemmer, S. Palo, B. Wallace, W. Lohmeyer, R. Agarwal, R. Mah and S. Latif "SWARM-EX Educational Programs in the Development of a Collaborative CubeSat Swarm", CubeSat Developers Workshop, virtual, Apr. 2021.
48. Volz, R., P.J. Erickson, F.D. Lind, S.E. Palo, N. Rainville, J. Marino, J. Chau and J. Vierinen, "Update on Zephyr and a Vision for Distributed MIMO Meteor Radar Networks", NSF CEDAR Meeting, virtual, Jun. 2021.
49. Caspi, A., A.Y. Shih, S. Panchapakesan, H. P. Warren, T. N. Woods, M. Cheung, C. E. DeForest, J. A. Klimchuk, G.T. Laurent, J.P. Mason, S.E. Palo, D.B. Seaton, M. Steslicki, S. Gburek, J. Sylwester, T. Mrozek, M. Kowaliński and M. Schattenburg, "The CubeSat Imaging X-ray Solar Spectrometer (CubIXSS)", 237th Meeting of the American Astronomical Society, Jan. 2021.
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51. Warshaw¹, L., S. Palo and D. Van Buren, "Design of a Low Power CDMA S-Band Receiver for CubeSat Constellations", AIAA Small Satellite Conference, Logan, UT, Aug. 2019.
52. Wang¹, J., and S. Palo, "Modeling Study of Short-term Variability of the Migrating Diurnal Tide", NSF CEDAR Meeting, Santa Fe, NM, Jun. 2019.
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54. Dahir¹, A., D. Kubitschek and S. Palo, "Progression of Recovering Time & State for Autonomous Navigation Systems in Deep Space", 42nd Annual AAS Guidance & Control Conference, Breckenridge, CO, Jan. 2019.
55. Marino¹, J., N. Rainville, and S. Palo, "Multi-static Meteor Radar", URSI, Boulder, CO, Jan., 2019.
56. Palo, S.E., "Designing, Building and Operating Small Satellites in a University Environment", North American Geological Remote Sensing Group, Boulder, CO, Jul. 2018.
57. Palo, S.E., "Small Satellite Efforts at the University of Colorado Boulder", 15th Annual International Planetary Probe Workshop", Boulder, CO, Jun. 2018.
58. Dahir¹, A., D. Kubitschek, and S.E. Palo, "Recovering Time and State For Autonomous Navigation Used for Small Satellites", 15th Annual International Planetary Probe Workshop", Boulder, CO, Jun. 2018.
59. Sobotzak, J.S. and S.E. Palo, "The CU-E3 Cubesat: An Entry in NASA's Cube Quest Challenge's Deep Space Derby", 15th Annual International Planetary Probe Workshop", Boulder, CO, Jun. 2018.

60. Rainville¹, N., S.E. Palo, and K.M. Larson, "Applying the GNSS Volcanic Ash Plume Detection Technique to Consumer Navigation Receivers", American Geophysical Union Fall Meeting, New Orleans, LA, Dec., 2017.
61. Palo, S.E. A. Dahir, N. Rainville, A. Antunes de Sa, C. Rouleau, N. Nell, M. Woods and B. Schwab, "Lessons learned from the Challenger Mission on QB50", European Cubesat Conference, Oostende, Belgium, Nov. 2017.
62. Palo, S.E. J. Sobtzak, B. Fried, K. Wislinsky, V. Joshi, D. Bansal, A. Aboaf, C. Dhangekar, J. Wagner, M. Williams, M. Deluca, N. Sonth, T. Moyer, L. Khoo, A. Forsman, T. Green, H. Ma, C. Musgrave, B. Branham, A. Herr, C. Gillard, T. Nielsen, K. Artner, and M. Pilinski, "The Colorado Earth Escape Explorer (CU-E3) a Deep Space Cubesat", European Cubesat Conference, Oostende, Belgium, Nov. 2017.
63. Palo, S., T. Woods, R. Kohnert and J. Mason, "Designing, Building and Operating Small Satellites in a University Environment", 3rd COSPAR Symposium : Small Satellites for Space Research, JeJu Island Korea, Oct., 2017.
64. Woods, T.N., J.P. Mason, A. Chandran, S. Palo and C. Rouleau, "Capacity Building for Sharing Low-Cost CubeSat Ground Stations", 3rd COSPAR Symposium : Small Satellites for Space Research, JeJu Island Korea, Oct., 2017.
65. Sobtzak, J., E. Tianang, B. Branham, N. Sonth, M. DeLuca, T. Moyer, S. Palo, "A Deep Space Radio Communications Link for CubeSats: The CU-E3 Communication Subsystem, Small Satellite Conference, Logan, UT, Aug., 2017.
66. Loucks¹, D., S.E., M. Pilinski, G. Crowley, I. Azeem and D. Hampton, "PFISR GPS Tracking Mode for Researching High Latitude Ionospheric Electronic Density Gradients Associated with GPS Scintillation", URSI, Boulder, CO, Jan., 2017.
67. Bradley¹, A.C., and S.E. Palo, "Understanding first-year ice thickness variability using IceBridge measurements and drift track analysis", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
68. Loucks¹, D., S.E., M. Pilinski, G. Crowley, I. Azeem and D. Hampton, "PFISR GPS Tracking Mode for Researching High Latitude Ionospheric Electronic Density Gradients Associated with GPS Scintillation", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
69. Rainville¹, N., K.M. Larson, S.E. Palo, M. Mattia, M. Rossi, M. Coltelli, C. Roesler and D. Fee, "Detecting Volcanic Ash Plumes with GNSS Signals", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
70. deBoer, G., D. Lawrence, S.E. Palo, B.M. Argrow, G. LoDolce, J. Mack, N. Curry, W. Finamore, J. Fromm, P. D'Amore, D. Weibel, C.N. Long, R-S. Gao, H. Telg, B. Schmid, M. Ivey, A. Bendure and G. Bland, "An update on unmanned aircraft operations along the North Slope of Alaska to understand the lower Arctic troposphere", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
71. Nguyen¹, V., R.S. Lieberman and S.E. Palo, "Impacts of nonlinear tidal-planetary wave interactions on the space-atmosphere interaction region", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2016.
72. Loucks^{1,#}, D., S.E., M. Pilinski, G. Crowley, I. Azeem and D. Hampton, "PFISR GPS Tracking Mode for Researching High Latitude Ionospheric Electronic Density Gradients Associated with GPS Scintillation", 10th Annual Earth Systems and Space Science Poster Conference, Boulder, CO, Nov. 2016. – winner best poster (middle and upper atmosphere).
73. Nguyen¹, V., S.E. Palo and N. Livesey, "Non-Linearly Interacting Waves in the Earth's Upper Atmosphere as Discerned in the New JPL "MUSTARD" Observation Record", JPL SURP Research Conference, Pasadena, CA, Nov. 2016.

74. Dahir¹, A., and S. Palo, "QB50 Challenger: Integration, Testing and Technical Challenges ", AIAA-RM Annual Technical Symposium, Golden CO, Oct. 2016.
75. Rouleau¹, C., A. Dahir, A. Lucas Antunes De Sa, M. Cirbo, M. Woods III, N. Nell, N. Rainville and S. Palo, " QB50 Challenger C&DH Software: Lessons Learned on a Student Team ", AIAA-RM Annual Technical Symposium, Golden CO, Oct. 2016.
76. Loucks¹, D., S.E., M. Pilinski, G. Crowley, I. Azeem and D. Hampton, "PFISR GPS Tracking Mode for Researching High Latitude Ionospheric Electronic Density Gradients Associated with GPS Scintillation", AIAA-RM Annual Technical Symposium, Golden CO, Oct. 2016.
77. Palo, S.E., T.N. Woods, J.P. Mason, C.S. Moore, C. Rouleau, C. Downs, D. Hegel, M.D. Baumgartner, B. Rogler, G. Stafford, A. Jones, R. Kohnert, X. Li, S.C. Solomon, P. Chamberlin and A. Caspi, "Mission Overview and Early Operations of the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat", 8th European CubeSat Conference, London England, Sep. 2016.
78. Palo, S.E. and D. Hegel, "XACT – High Performance Nano GN&C Technology", 8th European CubeSat Conference, London England, Sep. 2016.
79. Palo, S.E., A. Dahir, N. Rainville, J. Stark, N. Nell, C. Rouleau, A. Antunes de Sa and M. Woods, "QB50 US01 Challenger, The University of Colorado Boulder QB50 Constellation Satellite", 8th European Cu beSat Conference, London England, Sep. 2016.
80. Mason, J.P, M.D. Baumgart, T.N. Woods, C. Downs, D. Hegel, B. Rogler, G. Stafford, S.C. Solomon, P. Chamberlin, A. Caspi, S.E. Palo, A. Jones, R. Kohnert, X. Li, C.S. Moore, and C. Rouleau, "On-Orbit Performance and the First Flight of the BCT XACT 3-axis ADCS", AIAA Small Satellite Conference Pre-conference CubeSat Workshop, Logan, UT, August 2016.
81. Loucks¹, D., S.E. Palo, M. Pilinski, G. Crowley, I. Azeem and A. Reynolds "High-Latitude GPS Scintillation from E Region Electron Density Gradient During the December 20-21, 2015 Geomagnetic Storm", CEDAR Meeting, Santa Fe, NM, June 2016.
82. Nguyen¹ V., S.E. Palo and R. Lieberman "Inter-annual Variability of Nonlinear Wave Coupling in the Space-Atmosphere Interaction Region", CEDAR Meeting, Santa Fe, NM, June 2016. - **selected as the top student poster award in the MLT section of the CEDAR conference.**
83. Nguyen¹ V., S.E. Palo, R. Lieberman, T. Immel and A. Maute "ENSO Effects on the Diurnal Tide in the MLT Region", CEDAR Meeting, Santa Fe, NM, June 2016.
84. Vaudrin, C. and S.E. Palo, "SDR for Specular Meteor Radar", Multistatic Meteor Radar Workshop, Kuhlungsborn, Germany, June 2016.
85. Vaudrin, C., S.E. Palo and J. Chau, "Complex Plane Specular Meteor Radar Interferometry", Multistatic Meteor Radar Workshop, Kuhlungsborn, Germany, June 2016.
86. Vaudrin, C. and S.E. Palo, "Multistatic Meteor Radar: Forward Scatter Modelling and Simulation", Multistatic Meteor Radar Workshop, Kuhlungsborn, Germany, June 2016.
87. Woods, T.N., A. Caspi, P. Chamberlin, A. Jones, R. Kohnert, X. Li, J. Mason, C. Moore, S. Palo, C. Rouleau and S. Solomon, "Mission Overview of the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat", American Astronomical Society, SPD meeting #47, id.#8.16, Boulder, CO, May 2016.
88. Caspi, A., Woods, T.N., H. Warren, P. Chamberlin, A. Jones J. Mason, J. McTiernan, C. Moore, S. Palo and S. Solomon, "Science Goals and First Light Analysis from the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat", American Astronomical Society, SPD meeting #47, id.#3.06, Boulder, CO, May 2016.
89. Bradley¹, A.C., S.E. Palo, G. LoDolce, D. Weibel, D. Lawrence, and J. Maslanik, "Microbuoys in Arctic Sensing: novel instruments for low-cost and low-impact observing of the upper ocean", Arctic Observing Summit, Fairbanks, AK, 2016.

90. Palo, S., N. Rainville, A. Dahir, C. Rouleau, J. Stark, N. Nell, J. Fukushima and A. Antunes de Sa, "One of 50: Challenger, the University of Colorado Boulder QB50 Constellation Satellite", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
91. Nguyen¹, V., R. Lieberman, J.M. Forbes and S.E. Palo, "Addressing the Question of Large-Scale Nonlinear Wave Coupling in the Space-Atmosphere Interaction Region", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015. – received best student poster award, only the top 3-5% of all student posters receive this designation.
92. Rainville¹, N., S. Palo, K. Larson and S. Naik, "Development of a GNSS Volcano Ash Plume Detector", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
93. Bradley¹, A., S. Palo, and M. Steele "Trapped Heat and Cooling Processes in the Arctic Ocean Surface Mixed Layer", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
94. Lieberman, R., D. Riggan, D. Siskind, V. Nguyen, S. Palo, N., Mitchell, N. Livsey, G. Stober, S. Wilhelm, and C. Jacobi, "Observations of Secondary Waves Generated from Interaction Between the 2-Day Wave and the Migrating Diurnal Tide", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
95. Schiller¹, Q., X. Li, S. Palo, L. Blum, and D. Gerhardt, "The Colorado Student Space Weather Experiment: A successful student-run scientific spacecraft mission", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
96. deBoer, G., D. Lawrence, J. Elston, B. Argrow, S. Palo, N. Curry, W., Finamore, J., Mack, G., LoDolce, B. Schmid, C. Long, G. Bland, J. Maslanik, R-S., Gao, H. Telg, S. Semmer, G. Maclean, K, Ivey, T. Hock, B., Bartram, A., Bendure and M. Stachura, "Development and Deployment of Unmanned Aircraft Instrumentation for Measuring Quantities Related to Land Surface-Atmosphere Interactions", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2015.
97. Palo, S.E. T.N. Woods, X. Li, J. Mason, R. Kohnert and C. Rouleau, "Space Weather CubeSat Projects at the University of Colorado Boulder", AIAA Rocky Mountain Symposium, Golden, CO, Nov., 2015.
98. Bradley¹, A.C, and S.E. Palo, "Temperature Evolution of the Upper Arctic Ocean Mixed Layer Prior to the Onset of Freeze-up", 9th Annual Earth System and Space Science Poster Conference, Boulder, CO, Nov., 2015.
99. Loucks¹, D., S.E. Palo, M. Pilinski and G. Crowley, "Polar Ionosphere Structure & High Latitude Scintillation Impacts from the March 17, 2013 Geomagnetic Storm", 9th Annual Earth System and Space Science Poster Conference, Boulder, CO, Nov., 2015.
100. Bradley¹, A.C, S.E. Palo, G. LoDolce, D. Weibel, and D.A. Lawrence, "Near-surface Temperature Gradients Detected by Microbuoys in the Arctic Ocean", Arctic Observing Open Science Meeting, Seattle, WA, Nov., 2015.
101. Bradley¹, A.C, and S.E. Palo, "Freeze-up in the Arctic Ocean: New Processes in Response to a Changing Climate" Graduate Climate Conference, Woods Hole, MA, Nov., 2015.
102. Bradley¹, A.C, and S.E. Palo, "Temperature Evolution of the Upper Arctic Ocean Mixed Layer Prior to the Onset of Freeze-up" Forum for Arctic Modeling and Observational Synthesis Workshop #4, Woods Hole, MA, Nov., 2015.
103. Vaudrin¹, C., and S.E. Palo, "Meteor Trail Diffusion and Numerical Modeling of the Ground Illumination Pattern". Seminar at the Leibniz-Institute of Atmospheric Physics (IAP). NSF-CNIC program. Kühlungsborn, Germany, Nov., 2015.
104. Nguyen¹, V., S.E. Palo, R.S. Lieberman, "Observations of Secondary Wave Manifestation Arising from DW1-QTDW Interaction", CEDAR Meeting, Seattle, WA, June 2015.

105. Loucks¹, D., S.E. Palo, M. Pilinski and G. Crowley, "Polar Ionosphere Structure & High Latitude Scintillation Impacts from the March 17, 2013 Geomagnetic Storm", CEDAR Meeting, Seattle, WA, June 2015.
106. Nguyen¹, V., S.E. Palo, R.S. Lieberman, "Observations of Secondary Wave Manifestation Arising from DW1-QTDW Interaction", CEDAR Meeting, Seattle, WA, June 2015.
107. Vaudrin¹, C., and S.E. Palo, "Initial Results from a Recent Multistatic Meteor Wind Radar Experiment", CEDAR Meeting, Seattle, WA, June 2015.
108. Palo, S.E., D.A. Lawrence, A. Bradley, G. LoDolce and D. Weibel, "Air Deployed Microbouys (ADMB) and Self-Deployed Surface Sondes (SDSS): Tools for Conducting Polar Research" Polar Technology Conference, Denver, CO, Mar., 2015.
109. Vaudrin¹, C. and S.E. Palo, "The Multistatic Meteor Wind Radar: Motivations, System Design and Recent Results", Seminar at the Jet Propulsion Laboratory, Pasadena, CA, Feb., 2015.
110. Palo, S.E., "Interannual Variability of the Atmospheric Tides over South Pole from a Decade of Meteor Wind Observations", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2014.
111. Palo, S.E., X. Li, T. Woods, and R. Kohnert, "University of Colorado CubeSat Student Projects as Successful Model for Teaching Students about Engineering Practices", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2014.
112. Palo, S.E., D. O'Connor, E. DeVito, R. Kohnert, S. Altunc and G. Crum, "Development of an X-Band Transmitter for CubeSats", 6th European CubeSat Symposium, Estavayer-le-Lac, Switzerland, Oct., 2014.
113. Bradley¹, A., S.E. Palo, C. Zappa, G. LoDolce, D. Weibel and D. Lawrence, "Observations of Wind-Induced Motion in the Arctic Marginal Ice Zone", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2014.
114. Tschudi, M., J. Maslanik, W. Emery, S. Palo, et al., "MIZOPEX – A UAS Arctic Campaign During Summer 2013", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2014.
115. Nguyen¹, V., S.E. Palo and R. Lieberman, "Observations of Nonlinear Interaction Between Tides and Planetary Waves", 2014 University of Colorado Research Symposium, Boulder, CO, Nov., 2014.
116. Bradley¹, A.C., S.E. Palo, G. LoDolce, D. Weibel, and D. Lawrence, "Observations of Wind-Driven Processes in The Surface Layer Of The Marginal Ice Zone", Forum for Arctic Modeling and Observational Synthesis Workshop #3, Woods Hole, MA, Oct., 2014.
117. Nguyen¹, V., L. Chang, S.E. Palo and H-Liu, "Simulation of the 16-day wave in the stratosphere and mesosphere using TIME-GCM and MERRA", NSF CEDAR Workshop, Seattle, WA, Jun., 2014.
118. O'Connor, D., S.E. Palo, E. DeVito, R. Kohnert, G. Crum and S. Altunc, "Next Generation CubeSat Communication", Commercial and Government Responsive Access to Space Technology Exchange, Huntsville, AL, 2014.
119. Bradley¹, A.C., S.E. Palo, J. Maslanik, G. LoDolce, D. Weibel, and D.A. Lawrence, "Wind-Driven Processes in the Surface Layer of the Marginal Ice Zone", 44th International Arctic Workshop, Boulder, Colorado, Mar., 2014.
120. Palo, S.E., D. Gerhardt, X. Li, L. Blum, Q. Schiller and R. Kohnert, "One Year of On-Orbit Performance of the Colorado Student Space Weather Experiment", International Union of Radio Science National Meeting, Boulder, CO, Jan., 2014.
121. Vaudrin, C. and S.E. Palo, "Initial Results from a Forward-Scatter Meteor Wind Radar Experiment Based on the Colorado Software Defined Radar (COSRAD)", International Union of Radio Science National Meeting, Boulder, CO, Jan., 2014.

122. Nguyen¹, V., L.C. Chang, H. Liu and S.E. Palo, "Mechanisms Driving the Global and Seasonal Structure of the 16-day Planetary Wave", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2013.
123. Bradley¹, A., S.E. Palo, S.L. Knuth, and J.J. Cassano, "UAS Observations of Polynya Wave Height and Surface Temperature During the September 2012 Terra Nova Bay, Antarctica Field Campaign", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2013.
124. Palo, S.E., D. Weibel, D. Lawrence, G. LoDolce, A.C. Bradley, J. Adler, J. Maslanik and G. Walker, "First Results from UAS Deployed Ocean Sensor Systems during the 2013 MIZOPEX Campaign", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2013.
125. Zappa, C., S. Brown, W.J. Emery, J. Adler, G.A. Wick, M. Steele, S.E. Palo, G. Walker and J.A. Maslanik, "Local Effects of Ice Floes on Skin Sea Surface Temperature in the Marginal Ice Zone from UAVs", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2013.
126. Li, X., Q. Schiller, L. Blum, S. Califf, H. Zhao, A.N. Jaynes, W. Tu, D.L. Turner, D. Gerhardt, S.E. Palo, R. Selesnick, S.G. Kanekal, D.N. Baker, J.F. Fennell, J.B. Blake, M.D. Looper, G.D. Reeves and H. Spence, "Update on Science Results from CubeSat: Colorado Student Space Weather Experiment (CSSWE)" American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2013.
127. Bradley¹, A., and S.E. Palo, "UAS observations of Polynaya Wave Height and Surface Temperature during the September 2012 Terra Nova Bay Antarctica Field Campaign", 2013 University of Colorado Research Symposium, Boulder, CO, Nov., 2013.
128. Vaudrin¹, C., and S.E. Palo, "Ground Illumination Patterns from Specular Meteor Trail Scatter for Optimal Multistatic Meteor Wind Radar Receiver Ground Station Geometries", 2013 University of Colorado Research Symposium, Boulder, CO, Nov., 2013.
129. Gerhardt¹, D., S.E. Palo, X. Li, L. Blum, Q. Schiller and R. Kohnert, "The Colorado Student Space Weather Experiment (CSSWE) On-Orbit Performance", AIAA Small Satellite Conference, Logan, UT, Aug., 2013.
130. Chi-Kuang, C., L.C. Chang, S.E. Palo, Z-W Lin, "An Instrument Suite for the FORMOSAT-7/COSMIC-2 Micro-satellite Constellation", 10th Annual Asia Oceania Geosciences Society Meeting, Brisbane, Australia, Jun., 2013.
131. Palo, S.E. and C. Vaudrin, "Thoughts on Moving Meteor Science Forward", NSF CEDAR Workshop, Boulder, CO, Jun., 2013.
132. Nguyen¹, V. and S.E. Palo, "Transmission of Planetary Wave Effects to the Upper Atmosphere by Modulation of Turbulent Mixing", NSF CEDAR Workshop, Boulder, CO, Jun., 2013.
133. Nguyen¹, V. and S.E. Palo, "Is the Day-to-Day Variability of the Migrating Semidiurnal Tide Deterministic or Stochastic?", NSF CEDAR Workshop, Boulder, CO, Jun., 2013.
134. Vaudrin¹, C. and S.E. Palo, "Optimal Multistatic Specular Meteor Wind Radar Geometries", NSF CEDAR Workshop, Boulder, CO, Jun., 2013.
135. Palo, S.E., D. Gerhardt, X. Li, L. Blum, Q. Schiller and R. Kohnert, "On-Orbit Performance of the Colorado Student Space Weather Experiment", NSF CEDAR Workshop, Boulder, CO, Jun., 2013.
136. Palo, S.E., T. Woods, X. Li, J. Mason, M. Carton, A. Caspi, A. Jones, R. Kohnert and S. Solomon, "MinXSS: A Three Axis Stabilized CubeSat for Conducting Solar Physics", 5th European CubeSat Symposium, Brussels, Belgium, Jun., 2013.
137. Palo, S.E., D. Gerhardt, X. Li, L. Blum, Q. Schiller and R. Kohnert, "On-Orbit Performance of the Colorado Student Space Weather Experiment", 5th European CubeSat Symposium, Brussels, Belgium, Jun., 2013.
138. Palo, S.E., K.D. Kemble, M.D. Pilinski, B.L. Davis, L.E. Jasper, M. Sakaguchi, R.L. McNally, C.M. Cooke, B.T. Sander and C.J. Koehler, "The Wind and Temperature Spectrometer (WTS) and

- Accelerometer Suite on the DANDE Satellite”, 5th European CubeSat Symposium, Brussels, Belgium, Jun., 2013.
139. Li, X., S.E. Palo, et al, “Telescope Measurements of Energetic Particles: from PET to REPT to REPTile”, Caltech, Pasadena CA, Apr. 2013.
 140. Li, X., S.E. Palo, et al, “Small Mission (CSSWE) – Big Impact on Space Weather Research”, NOAA/SWPC, Boulder CO, Feb., 2013.
 141. Pilinski, M., B. Argrow, S. Palo, and B. Bowman, “Semi-Empirical Satellite Accommodate Model (SESAM)”, IMPACT workshop, Santa Fe, NM, Jan., 2013.
 142. Vaudrin¹, C. and S.E. Palo, “A Meteor Wind Radar Measurement Campaign Using the Colorado Software Defined Radar with Meteor Trail Echoes Interpreted Under a Modern Diffusion Theory”, International Union of Radio Science National Meeting, Boulder, CO, Jan., 2013.
 143. Li, X., S.E. Palo, et al, “Our First CubeSat Mission: Concept to Reality and Impact”, LASP, Boulder, CO, Jan., 2013.
 144. Li, X., S.E. Palo, et al, “Colorado Student Space Weather Experiment (CSSWE) CubeSat Mission: A Success in Education, Engineering, and Science”, NCAR/HAO Jan., 2013.
 145. Palo, S.E., D. Lawrence, D. Weibel, G. LoDolce, S. Krist, I. Crocker and J. Maslanik, “UAV deployed sensor system for Arctic Ocean remote sensing”, American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2012.
 146. Li, X., S.E. Palo, R. Kohnert, D. Gerhardt, L.W. Blum, Q. Schiller, D.L. Turner, W. Tu, “First Results from the Colorado Student Space Weather Experiment (CSSWE): Differential Flux Measurements of Energetic Particles in a Highly Inclined Low Earth Orbit”, American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2012.
 147. Palo, S.E., “Atmospheric Tides in the Polar Region: An Example of Hemispheric Coupling”, Polar Workshop, Durham, NH, Nov. 2012.
 148. Williams, C.R., L. Bianco, P. Johnston, D. Law, S.E. Palo and C. Vaudrin, “Developing a Lower Boundary Layer Radar for Renewable Energy Research”, CIRES IDP seminar, Nov., 2012.
 149. Palo, S.E., “Variability of the Nonmigrating Semidiurnal Tide and Connection to the Polar Stratosphere”, Mesosphere and Lower Thermosphere Workshop, Logan UT, Oct. 2012.
 150. Chang, L., S.E. Palo, F. Herrero, K. Kemble, M. Pilinski, G. Crowley, and C-K. Chao, “Instrument suite for neutral and ion-drifts, equivalent temperatures and composition”, Sixth FORMOSAT-3/COSMIC Data Users Workshop, Boulder, CO, Oct., 2012.
 151. Nguyen¹, V. and S.E. Palo, “Estimating the Day-to-Day Variability of the Migrating Diurnal Tide through Satellite Observations”, CEDAR workshop, Santa Fe, NM, Jun. 2012.
 152. Vaudrin¹, C. and S.E. Palo, “A Hardware Description of the Colorado Software Defined Radar”, CEDAR workshop, Santa Fe, NM, Jun. 2012.
 153. Vaudrin¹, C. and S.E. Palo, “A Multistatic Common-volume Meteor Wind Radar Measurement Technique”, CEDAR workshop, Santa Fe, NM, Jun. 2012.
 154. Vaudrin¹, C. and S.E. Palo, “Colorado Software Defined Radar: Hardware, Results, Reconfigurability and Deployment”, 13th International Workshop on Technical and Scientific Aspects of MST Radar, Kuhlungsborn, Germany, Mar. 2012.
 155. Vaudrin¹, C. and S.E. Palo, “Colorado Software Defined Radar: Hardware, Results, Reconfigurability and Deployment”, International Union of Radio Science National Meeting, Boulder, CO, Jan., 2012.
 156. Palo, S.E., “Building a Digital Meteor Radar for Aeronomic Research”, American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2011.

157. Pilinski¹, M., B. Argrow and S. Palo, "Relative-Density Anomalies below 200 km as Observed by Aerodynamic Drag on Orbiting Rocket Bodies: Preliminary Results", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2011.
158. Palo, S.E. and F.E. Estante, "Connections between the nonmigrating semidiurnal tide over the South Pole and stationary planetary waves in the northern hemisphere", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2011.
159. Close, S. A. Li, A. Kalman, N. Lee, S. Palo, and B. Twiggs "QB50: The American Effort in Cubesats", 2nd QB50 workshop, Brussels, Belgium, Jul. 2011.
160. Liu, A., S. Close, and S. Palo, "QB50: An International Network of CubeSats for Multi-Point, In-situ, Long-duration Measurements in the Lower-Thermosphere and Re-entry Research", CEDAR workshop, Boulder, CO, Jun. 2011.
161. Pilinski¹, M., S. Palo and B. Argrow, "Using Observed Aerodynamic Drag on Rocket Bodies to Infer Atmospheric Densities at Altitudes Below 200 km", CEDAR workshop, Boulder, CO, Jun. 2011.
162. Estante¹, F.E., and S.E. Palo, "Short-term variability of the s=1 nonmigrating semidiurnal tide over the South Pole due to coupling with Northern Hemisphere wave activity", CEDAR workshop, Boulder, CO, Jun. 2011.
163. Howe, S., S. Blair, S. Palo, J. Kanai, P. Rogers, G. Livesay, R. K. Stanfill and M. Paretti, "Capstone Design Hub: Building the Capstone Design Community", American Society of Engineering Educators Annual Conference, Vancouver, Canada, Jun., 2011.
164. Chang¹, L.C., J.-Y. Liu, and S.E. Palo, "Inter-annual observations of diurnal tidal components in SABER temperatures and COSMIC electron densities", 5th FORMOSAT-3/COSMIC Workshop 2011, Taiwan, April 2011.
165. Vaudrin¹, C. and S.E. Palo, "Data analysis, meteor trail echo phenomenology and a brief hardware overview of Aether: a data acquisition system and software meteor wind radar", International Union of Radio Science National Meeting, Boulder, CO, Jan., 2011.
166. P.-D. Pautet, M.J. Taylor, B.P. Williams, and S.E. Palo, "Joint Investigation of Mesospheric Gravity Wave Characteristics and Dynamics over South Pole Station (90°S) during the Austral Winter 2010", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2010.
167. Chang¹ L., S.E. Palo, and H.L. Liu, "Nonlinear Interaction between the Migrating Diurnal Tide and the Quasi-Two Day Wave", American Geophysical Union Fall Meeting, San Francisco, CA, Dec., 2010.
168. Pilinski¹, M., B. Argrow and S. Palo, "Energy Accommodation Modeling and the Implications for Density Retrieval during the Recent Solar Minimum", NADIR: Neutral Atmosphere Density Interdisciplinary Research Workshop, Boulder, CO, Oct., 2010.
169. Papas, P., D. Munoz, M. Asheim, P. Moriarty and S. Palo, "Measurement of Aeroacoustic Noise Generated on a Wind Turbine Blade and Potential Mitigation Devices", CREW Symposium, Aug., 13, 2010.
170. Nallamothu¹, M., D. Turner, S. Palo and X. Li, "The Colorado Student Space Weather Experiment (CSSWE) Command and Data Handling System", CubeSat Developer's Workshop, Logan, UT, Aug., 2010.
171. Chandran¹, A., D.W. Rusch, S.E. Palo, A.W. Merkel, G.E. Thomas, and E.J., Jensen, "Atmospheric Gravity wave effects on polar mesospheric clouds: A comparison of numerical simulations from CARMA 2D with AIM observations", 38th COSPAR Scientific Assembly, Bremen, Germany, Jul., 2010.
172. Cornman, L., P. Axelrad, R.K. Goodrich, S.E. Palo, J. Burkert and E. Barlow, "Use of GPS/COSMIC Occultations to Analyze Turbulent Structures in the Atmosphere", 38th COSPAR Scientific Assembly, Bremen, Germany, Jul., 2010.

173. Palo, S.E., D. Gerhardt, and D. Murphy, "Variability of Short Period Lamb Waves Observed over Antarctica", 38th COSPAR Scientific Assembly, Bremen, Germany, Jul., 2010.
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