
CONTACT	jszalay@princeton.edu // 171 Broadmead St., Princeton, NJ 08540	
EDUCATION	University of Colorado Boulder	12/2015
	Ph.D., Physics. Advisor: Mihály Horányi Thesis: The Lunar Dust Environment	
	James Madison University	05/2010
	B.S., Physics, <i>magna cum laude</i> , Mathematics, <i>with distinction</i> .	
RESEARCH EXPERIENCE	Princeton University	
	Research Scholar	07/2022 - present
	Associate Research Scholar	07/2017 - 06/2022
	Southwest Research Institute	
	Research Scientist	04/2017 - 06/2017
	Postdoctoral Researcher	01/2016 - 04/2017
	University of Colorado Boulder	
	Graduate Research Assistant	08/2010 - 12/2015
	Johns Hopkins University Applied Physics Laboratory	
	Undergraduate Research Assistant	06/2007 - 08/2009
RESEARCH INTERESTS	Space plasmas, dust, and energetic neutral atoms. Auroral acceleration processes and satellite-magnetosphere interactions in the outer planets. Meteoroid impact processes at airless bodies throughout the solar system. Evolution of zodiacal dust. The interaction of our heliosphere with the local interstellar medium.	
HONORS & AWARDS	NASA Outstanding Achievement Award. Parker Solar Probe IS [⊙] IS Team, 2022 NASA Group Achievement Award. Juno Mission Re-Design Team, 2018 NASA Group Achievement Award. Juno Orbit Insertion Team, 2016 NASA Certificate of Achievement. LADEE Mission, 2014 Asteroid 2006 JN62 named (189312) jameyszalay, 2018 NASA Earth and Space Sciences Graduate Research Fellowship, 2012 - 2015 Barry Goldwater Scholarship, 2009 - 2010	
MISSION AND INSTRUMENT EXPERIENCE	LADEE – Lunar Dust Experiment (LDEX) New Horizons – Student Dust Counter (SDC) and Solar Wind Around Pluto (SWAP) Juno – Jovian Auroral Distributions Experiment (JADE) IBEX – IBEX-Hi Parker Solar Probe, Participating Scientist – Integrated Science Investigation of the Sun (IS [⊙] IS), FIELDS IMAP, Co-Investigator – Interstellar Dust Experiment (IDEX)	

**FUNDED
RESEARCH**

Co-I – NASA New Frontiers Data Analysis Program – \$261,753* <i>Standing Alfvén waves and particle energization in the Jovian magnetosphere</i>	2023 - 2026
Co-I – NASA New Frontiers Data Analysis Program – \$71,595* <i>The Dust Environment Near Jupiter</i>	2023 - 2026
Co-I – NASA IMAP Mission	2022 - 2025
Co-I – NASA Dev. and Advancement of Lunar Instr. Program – \$60,742* <i>Lunar Meteoroid Monitor (LMM)</i>	2022 - 2025
PI – NASA Parker Solar Probe Guest Investigator Program – \$492,560 <i>The Near-Sun Dust Environment</i>	2021 - 2024
Co-I – NASA New Frontiers Data Analysis Program – \$233,099* <i>Satellite-magnetosphere interactions observed by Juno</i>	2021 - 2024
Co-I – NASA New Frontiers Data Analysis Program – \$262,965* <i>Anisotropy of the radiation belts of Jupiter in the Europa-Ganymede region</i>	2021 - 2024
PI – NASA Lunar Data Analysis Program – \$288,534 <i>Constraining Impact Ejecta Production at the Moon with LADEE/LDEX data</i>	2016 - 2022
Science-PI – NASA Earth and Space Science Fellowship – \$90,000 <i>The Dusty Plasma Environment of Airless Bodies in the Solar System</i>	2012 - 2015

*Values listed for Co-I proposals are subaward amounts

**MENTORING /
SUPERVISION****Postdoctoral Scholars**

Dr. Yash Sarkango, Ph.D. University of Michigan <i>Topic: Charge exchange between plasma and neutrals in Jupiter's magnetosphere</i> Currently a Postdoctoral Scholar at Princeton University.	2022 - present
Dr. Mitchell Shen, Ph.D. University of Colorado Boulder <i>Topic: Dust impact environment as measured by Parker Solar Probe</i> Currently a Postdoctoral Scholar at Princeton University.	2021 - present
Dr. Michael DeLuca, Ph.D. University of Colorado Boulder <i>Topic: Effects of β-meteoroids on airless bodies</i> Currently a Postdoctoral Scholar at Princeton University.	2021 - 2022
Dr. Gian Anderone, Ph.D. University of Iowa <i>Topic: Charge exchange between plasma and neutrals in Jupiter's magnetosphere</i>	2021 - 2022

Undergraduate Students

Wolf Cukier, Dept. of Astrophysical Sciences, Princeton University <i>Publication: Formation, Structure, and Detectability of the Geminids Meteoroid Stream</i>	2021 - present
Luke Begley, Dept. of Physics, Princeton University <i>Senior Thesis: JADE Observations of the Water Group Gas Torus in the Proximity of Europa</i>	2021 - 2022

PUBLICATIONS
(Refereed)

135 peer-reviewed publications, with 23 as first author and 12 as second author, including 4 publications in Nature & Science and 3 Book/Review chapters, h-index: 28 and >2,800 citations ([Google Scholar](#)).

– In Press –

[-] Mauk, B. H., **Szalay, J. R.**, Allegrini, F., Bagenal, F., Bolton, S. J., Clark, G., Connerney, J. E. P., Gladstone, G. R., Haggerty, D. K., Kollmann, P., Kurth, W. S., Paranicas, C. P., Sulaiman, A. H., How Bi-Modal are Jupiter's Main Aurora Zones?, *JGR-Space*, (*in press*)

[-] Malaspina, D. M., Toma, A., **Szalay, J. R.**, Pulupa, M., Pokorny, P., Bale, S. D., Goetz, K., A dust detection database for the inner heliosphere using the Parker Solar Probe spacecraft, *ApJS*, *in press*

– 2023 –

[135] Clark, G., **Szalay, J. R.**, Sulaiman, A. H., Saur, J., Kollmann, P., Mauk, B. H., Paranicas, C., Hue, V., Greathouse, T., Allegrini, F., Glocer, A., Garcia-Sage, K., Bolton, S., (2023). Energetic ion acceleration by EMIC waves in Io's footprint tail, *Front. Astron. Space Sci.*, <https://doi.org/10.3389/fspas.2023.1016345>

[134] Andrés, N., Bandyopadhyay, R., McComas, D. J., **Szalay, J. R.**, Allegrini, F., Ebert, R. W., Gershman, D. J., Connerney, J. E. P., Bolton, S. J., (2023). Observation of Turbulent Magnetohydrodynamic Cascade in the Jovian Magnetosheath, *ApJ*, 945:8, <https://doi.org/10.3847/1538-4357/acb7e0>

[133] Brandt, P. C., Provornikova, E., Bale, S. D., Cocoros, A., DeMajistre, R., Dialynas, K., Elliott, H. A., Eriksson, S., Fields, B., Galli, A., Hill, M. E., Horanyi, M., Horbury, T., Hunziker, S., Kollmann, P., Kinnison, J., Fountain, G., Krimigis, S. M., Kurth, W. S., Linsky, J., Lisse, C. M., Mandt, K. E., Magnes, W., McNutt, R. L., Miller, J., Moebius, E., Mostafavi, P., Opher, M., Paxton, L., Plaschke, F., Poppe, A. R., Roelof, E. C., Runyon, K., Redfield, S., Schwadron, N., Sterken, V., Swaczyna, P., **Szalay, J. R.**, Turner, D., Vannier, H., Wimmer-Schweingruber, R., Wurz, P., Zirnstein, E. J., (2023). Future Exploration of the Outer Heliosphere and Very Local Interstellar Medium by Interstellar Probe, *SSR*, <https://doi.org/10.1007/s11214-022-00943-x>

[132] Raouafi, N. E., Matteini, L., Squire, J., Badman, S. T., Velli, M., Klein, K. G., Chen, C. H. K., Matthaeus, W. H., Szabo, A., Linton, M., Allen, R. C., **Szalay, J. R.**, Decker, R. B., Akhavan-Tafti, M., Agapitov, O. V., Bale, S. D., Bandyopadhyay, R., Battams, K., Bercic, L., Bourouaine, S., Bower, T., Cattell, C., Chandran, B. D. G., Chhiber, R., Cohen, C. M. S., D'Amicis, R., Giacalone, J., Hess, P., Howard, R. A., Horbury, T. S., Jagarlamudi, V. K., Joyce, C. J., Kasper, J. C., Kinnison, J., Laker, R., Liewer, P., Malaspina, D. M., Mann, I., McComas, D. J., Niembro-Hernandez, T., Panasenco, O., Pokorný, P., Pusack, A., Pulupa, M., Perez, J. C., Riley, P., Rouillard, A. P., Shi, C., Stenborg, G., Tenerani, A., Verniero, J. L., Viall, N., Vourlidas, A., Wood, B. E., Woodham, L. D., Woolley, T., (2023). Parker Solar Probe: Three Years of Discoveries at Solar Cycle Minimum, *SSR*, 219:8, <https://doi.org/10.1007/s11214-023-00952-4>

[131] Bernardoni, E. A., Horányi, M., & **Szalay, J. R.**, (2023). Searching for Evidence for Electrostatic Dust Lofting on the Moon in LDEX's Integrated Current Measurements, *PSJ*, 4:20, <https://doi.org/10.3847/PSJ/aca898>

[130] McComas, D. J., Sharma, T., Christian, E. R., Cohen, C. M. S., Desai, M. I., Hill, M. E., Khoo, L. Y., Matthaeus, W. H., Mitchell, D. G., Pecora, F., Rankin, J. S., Schwadron, N. A., **Szalay, J. R.**, Shen, M. M., Braga, C. R., Mostafavi, P. S., Bale, S. D., (2023). Parker Solar Probe Encounters the Leg of a Coronal Mass Ejection at 14 Solar Radii, *ApJ*, 943:71, <https://doi.org/10.3847/1538-4357/acab5e>

[129] Mitchell, J. G., Cohen, C. M. S., Eddy, T. J., Joyce, C. J., Rankin, J. S., Shen, M. M., De Nolfo, G. A., Christian, E. R., McComas, D. J., McNutt, R. L., Wiedenbeck, M. E., Schwadron, N. A., Hill, M. E., Labrador, A. W., Leske, R. A., Mewaldt, R. W., Mitchell, D. G., **Szalay, J. R.**, (2023). A Living Catalog of Parker Solar Probe ISOIS Energetic Particle Enhancements, *ApJ*, 264:31, <https://doi.org/10.3847/1538-4365/aca4c8>

[128] Roth, L., Marchesini, G., Becker, T. M., Hoeijmakers, H. J., Molyneux, P. M., Retherford, K. D., Saur, J., Carberry Mogan, S. R., **Szalay, J. R.**, (2023). Probing Ganymede’s atmosphere with HST Lyman- α images in transit of Jupiter, *PSJ*, <https://doi.org/10.3847/PSJ/acaf7f>

– 2022 –

[127] Allegrini, F., Bagenal, F., Ebert, R. W., Louarn, P., McComas, D. J., **Szalay, J. R.**, Valek, P., Wilson, R., Bolton, S. J., Connerney, J. E. P., Clark, G., Duling, S., Kurth, W. S., Mauk, B., Saur, J., Waite, J. H., (2022). Plasma observations during the June 7, 2021 Ganymede flyby from the Jovian Auroral Distributions Experiment (JADE) on Juno, *GRL*, <https://doi.org/10.1029/2022GL098682>

[126] Clark, G., Mauk, B. H., Paranicas, C., Kollmann, P., Haggerty, D., Rymer, A., Smith, H. T., Saur, J., Allegrini, F., Duling, S., Ebert, R. W., Kurth, W. S., Gladstone, R., Greathouse, T. K., Li, W., Bagenal, F., Connerney, J. E. P., Bolton, S., **Szalay, J. R.**, Sulaiman, A. H., Hansen, C. J., Turner, D. L., (2022). Energetic Charged Particle Observations during Juno’s Close Flyby of Ganymede, *GRL*

[125] Ebert, R. W., Fuselier, S. A., Allegrini, F., Bagenal, F., Bolton, S. J., Clark, G., Connerney, J. E. P., DiBraccio, G. A., Kurth, W. S., Levin, S., McComas, D. J., Montgomery, J., Romanelli, N., Sulaiman, A. H., **Szalay, J. R.**, Valek, P., Wilson, R. J., (2022). Evidence for magnetic reconnection at Ganymede’s upstream magnetopause during the PJ34 Juno flyby, *GRL*

[124] Valek, P. W., Waite, J. H., Allegrini, F., Ebert, R. W., Bagenal, F., Bolton, S. J., Connerney, J. E. P., Kurth, W. S., **Szalay, J. R.**, Wilson, R. W., (2022). In situ ion composition observation of Ganymede’s outflowing ionosphere, *GRL*

[123] Janser, S., Saur, J., Clark, G., Sulaiman, A. H., **Szalay, J. R.**, (2022). Properties of turbulent Alfvénic fluctuations and wave-particle interaction associated with Io’s footprint tail, *JGR-Space*, <https://doi.org/10.1029/2022JA030675>

[122] Munoz Jr., J. R., Allegrini, F., Ebert, R. W., Wilson, R. J., **Szalay, J. R.**, Menietti, J. D., Louarn, P., Bolton, S. J., Connerney, J. E. P., (2022). A Survey of Electron Conics at Jupiter Utilizing the JADE-E Data During Science Orbits 01, 03-30, *JGR-Space Physics*, <https://doi.org/10.1029/2022JA030418>

[121] Starkey, M. J., Dayeh, M. A., Fuselier, S. A., Petriner, S. M., McComas, D. J., Ogasawara, K., **Szalay, J. R.**, Schwadron, N. A., Sokol, J. M., (2022). Solar Wind Impact on ENAs from Earth’s Subsolar Magnetosheath, *JGR-Space*, 127. <https://doi.org/10.1029/2022JA030965>

[120] Livadiotis, G., McComas, D. J., Funsten, H. O., Schwadron, N. A., **Szalay, J. R.**, Zirnstein, E., (2022). Thermodynamics of the inner heliosheath, *ApJS*, 262:53, <https://doi.org/10.3847/1538-4365/ac8b88>

[119] Battams, K., Gutarra-Leon, A. J., Gallagher, B. M., Knight, M. M., Stenborg, G., Tanner, S., Linton, M. G., **Szalay, J. R.**, Kelley, M. S. P., Howard, R. A., (2022). Continued PSP/WISPR Observations of a Phaethon-related Dust Trail, *ApJ*, 936:81

[118] Sulaiman, A. H., Mauk, B. H., **Szalay, J. R.**, Allegrini, F., Clark, G., Gladstone, G. R.,

Kotsiaros, S., Kurth, W. S., Bagenal, F., Bonfond, B., Connerney, J. E. P., Ebert, R. W., Elliott, S. S., Gershman, D. J., Hospodarsky, G. B., Hue, V., Lysak, R. L., Masters, A., Santolik, O., Saur, J., Bolton, S. J., (2022). Jupiter’s low-altitude auroral zones: Fields, particles, plasma waves, and density depletions, *JGR-Space Physics*

[117] Bandyopadhyay, R., Begley, L. J., Maruca, B. A., McComas, D. J., **Szalay, J. R.**, Allegrini, F., Ebert, R. W., Gershman, D. J., Connerney, J. E. P., Bolton, S. J., (2022). Beta-dependent Constraints on Ion Temperature Anisotropy in Jupiter’s Magnetosheath, *GRL*

[116] **Szalay, J. R.**, Smith, H. T., Zirnstein, E. J., McComas, D. J., Bagenal, F., Delamere, P. A., Wilson, R. J., Valek, P., Poppe, A. R., N nnon, Q., Allegrini, F., Ebert, R. W., Bolton, S. J., (2022). Water-group pickup ions from Europa-genic neutrals orbiting Jupiter, *GRL*, 49, <https://doi.org/10.1029/2022GL098111>

[115] **Szalay, J. R.**, Clark, G., Livadiotis, G., McComas, D. J., Mitchell, D. G., Rankin, J. S., Sulaiman, A. H., Allegrini, F., Bagenal, F., Ebert, R. W., Gladstone, G. R., Kurth, W. S., Mauk, B. H., Valek, P., Wilson, R. J., Bolton, S. J., (2022). Closed Fluxtubes and Dispersive Proton Conics at Jupiter’s Polar Cap, *GRL*, 49, <https://doi.org/10.1029/2022GL098741>

[114] Hue, V., **Szalay, J. R.**, Greathouse, T. K., Bonfond, B., Kotsiaros, S., Louis, C. K., Sulaiman, A., Clark, G., Allegrini, F., Gladstone, G. R., Paranicas, C., Versteeg, M. H., Mura, A., Moirano, A., Gershman, D. J., Bolton, S. J., Connerney, J. E. P., Davis, M. W., Ebert, R., W., Gerard, J.-C., Giles, R. S., Grodent, D. C., Imai, M., Kammer, J. A., Kurth, W. S., Lamy, L., Mauk, B. H. (2022). A Comprehensive Set of Juno In Situ and Remote Sensing Observations of the Ganymede Auroral Footprint, *GRL*, 49, <https://doi.org/10.1029/2021GL096994>

[113] Bernardoni, E., Hor nyi, M., Doner, A., Piquette, M., **Szalay, J. R.**, Poppe, A. R., James, D., Olkin, C., Spencer, J., Stern, A., Weaver, H. (2022). Student Dust Counter status report: The first 50 AU, *PSJ*, <https://doi.org/10.3847/PSJ/ac5ab7>

[112] Starkey, M. J., Dayeh, M. A., Fuselier, S. A., Petriner, S. M., McComas, D. J., Ogasawara, K., **Szalay, J. R.**, Schwadron, N. A. (2022). Determining the Near-instantaneous Curvature of Earth’s Bow Shock using Simultaneous IBEX and MMS Observations, *JGR-Space*, 127, <https://doi.org/10.1029/2021JA030036>

[111] Getachew, T., McComas, D. J., Joyce, C. J., Palmerio, E., Christian, E. R., Cohen, C. M. S., Desai, M. I., Giacalone, J., Hill, M. E., Matthaeus, W. H., McNutt, R. L., Mitchell, D. G., Mitchell, J. G., Rankin, J. S., Roelof, E. C., Schwadron, N. A., **Szalay, J. R.**, Zank, G. P., Zhao, L.-L., Lynch, B. J., Phan, T. D., Bale, S. D., Whittlesey, P. L., Kasper, J. C. (2022). PSP/ISOIS Observations of a Solar Energetic Particle Event Associated with a Streamer Blowout Coronal Mass Ejection during Encounter 6, 925:212, *ApJ*, <https://doi.org/10.3847/1538-4357/ac408f>

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– 2021 –

[109] Cohen, C. M. S., Christian, E. R., Cummings, A. C., Davis, A. J., Desai, M. I., de Nolfo, G. A., Giacalone, J., Hill, M. E., Joyce, C. J., Labrador, A. W., Leske, R. A., Matthaeus, W. H., McComas, D. J., McNutt Jr., R. L., Mewaldt, R. A., Mitchell, D. G., Mitchell, J. G., Rankin, J. S., Roelof, E. C., Schwadron, N. A., Stone, E. C., **Szalay, J. R.**, Wiedenbeck, M. E., Vourlidas, A., Bale, S. D., Pulupa, M., MacDowall, R. J. (2021). PSP/ISOIS Observations of the 29 November 2020 Solar Energetic Particle Event, *A&A*, 656, <https://doi.org/10.1051/0004-6361/202140967>

- [108] Ebert, R. W., Greathouse, T. K., Clark, G., Hue, V., Allegrini, F., Bagenal, F., Bolton, S. J., Bonfond, B., Connerney, J. E. P., Gladstone, G. R., Imai, M., Kotsiaros, S., Kurth, W. S., Levin, S., Louarn, P., Mauk, B. H., McComas, D. J., Paranicas, C., Sulaiman, A. H., **Szalay, J. R.**, Thomsen, M. F., Wilson, R. J. (2021). Simultaneous UV Images and Particle Measurements of an Auroral Dawn Storm at Jupiter, *JGR Space*, 126, <https://doi.org/10.1029/2021JA029679>
- [107] Mitchell, J. G., de Nolfo, G. A., Hill, M. E., Christian, E. R., Richardson, I. G., McComas, D. J., McNutt, R. L., Mitchell, D. G., Schwadron, N. A., Bale, S. D., Giacalone, J., Joyce, C. J., Niehoff, J. T., **Szalay, J. R.** (2021). Energetic Electron Observations by Parker Solar Probe/ISOIS during the First Widespread SEP Event of Solar Cycle 25 on 29 November 2020, *ApJ*, <https://doi.org/10.3847/1538-4357/ac110e>
- [106] Pusack, A., Malaspina, D. M., **Szalay, J. R.**, Bale, S. D., Goetz, K., MacDowall, R. J., Pulupa, M., (2021). Dust directionality and interplanetary dust populations detected by Parker Solar Probe, *PSJ*, 2:186, <https://doi.org/10.3847/PSJ/ac0bb9>
- [105] **Szalay, J. R.**, Pokorný, P., Malaspina, D. M., Pusack, A., Bale, S. D., Battams, K., Gasque, L. C., Goetz, K., Krüger, H., McComas, D. J., Schwadron, N. A., Strub, P. (2021). Collisional Evolution of the Inner Zodiacal Cloud, *PSJ*, 2:185, <https://doi.org/10.3847/PSJ/abf928>
- [104] Mason, G. M., et al. (2021), Solar Energetic Particle Heavy Ion Properties in the Widespread Event of 2020 November 29, *A&A*, <https://doi.org/10.1051/0004-6361/202141310>
- [103] Allegrini, F., Kurth, W., Elliott, S., Saur, J., Livadiotis, G., Nicolaou, G., Bagenal, F., Bolton, S., Clark, G., Connerney, J., Ebert, R., Gladstone, R., Louarn, P., Mauk, B., McComas, D. J., Sulaiman, A., **Szalay, J. R.**, Valek, P., Wilson, R. (2021). Electron partial density and temperature over Jupiter's main auroral emission using Juno observations, *JGR-Space*, 126, <http://dx.doi.org/10.1029/2021JA029426>
- [102] Moirano, A., Mura, A., Adriani, A., Dols, V., Bonfond, B., Waite Jr., J. H., Hue, V., **Szalay, J. R.**, Sulaiman, A. H., Dinelli, B. M., Tosi, F., Altieri, F., Cicchetti, A., Filacchione, G., Grassi, D., Migliorini, A., Moriconi, M., Noschese, R., Piccioni, G., Sordini, R., Turrini, D., Plainaki, C., Sindoni, G., Massetti, S., Lysak, R. L., Ivanovski, S. L., Bolton, S. J. (2021). Morphology of the Auroral Tail of Io, Europa and Ganymede from JIRAM L-band imager. *Journal of Geophysical Research: Space Physics*, 126, <http://dx.doi.org/10.1029/2021JA029450>
- [101] Joyce, C. J., McComas, D. J., Schwadron, N. A., Vourlidas, A., Christian, E. R., McNutt, R. L., Cohen, C. M. S., Leske, R. A., Mewaldt, R. A., Stone, E. C., Mitchell, D. G., Hill, M. E., Roelof, E. C., Allen, R. C., **Szalay, J. R.**, Rankin, J. S., Desai, M. I., Giacalone, J., Matthaeus, W. H., Niehof, J. T., de Wet, W., Poduval, B., Winslow, R. M., Bale, S. D., Kasper, J. C. (2021). Energetic Particle Evolution During CME Passage from 0.3 to 1 au, *A&A*, <https://doi.org/10.1051/0004-6361/202039933>
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- [99] Huscher, E., Bagenal, F., Wilson, R. J., Allegrini, F., Ebert, R. W., Valek, P. W., **Szalay, J. R.**, McComas, D. J., Connerney, J. E. P., Bolton, S., Levin, S. M., (2021). Survey of Juno Observations in Jupiter's Plasma Disk: Density, *JGR-Space*, <https://doi.org/10.1029/2021JA029446>
- [98] Elliott, S. S., Sulaiman, A. H., Kurth, W. S., Faden, J., Allegrini, F., Valek, P., Connerney, J. E. P., Ebert, R. W., **Szalay, J. R.**, Bagenal, F., Bolton, S. J., (2021). The high-latitude extension of Jupiter's Io torus: Electron densities measured by Juno Waves, *JGR-Space*, <https://doi.org/10.1029/2021JA029446>

[//doi.org/10.1029/2021JA029195](https://doi.org/10.1029/2021JA029195)

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INVITED TALKS

Opportunities to Directly Observe the Interaction of Interstellar Dust with our Heliosphere with an Interstellar Probe, AGU (12/22)

The satellite footprints in Jupiter's aurora and the processes giving rise to them, MOP (7/22)

A new framework to explain changes in Io's footprint tail electron fluxes in the Juno era, EPSC (8/21)

The Near-Sun Dust Environment, Parker One (6/21)

Collisional Evolution of the Inner Zodiacal Cloud, Parker Solar Probe Working Group Meeting #20 (4/21)

Particle Acceleration by Io's Alfvénic Interaction: New Views from Juno, AGU 2019 (12/19)

Impact Gardening in the Lunar Polar Regions, Lunar Polar Volatiles Workshop, JHU/APL (8/18)

Meteoroid Streams on Airless Bodies, International Conference for Dusty Plasma Physics, Prague, Czech Republic (5/17)

The Dust Environment of the Moon, Dust, Atmospheres, and Plasma Workshop, Boulder, CO (1/17)

SEMINARS/ COLLOQUIA

The Moon's Response to the Interplanetary Meteoroid Environment, Freie Universität Berlin (5/22)

The Interaction of Interstellar Dust with our Heliosphere, Outer Heliosphere and Very Local Interstellar Medium Discussion Group (5/22)

Satellite-Magnetosphere interactions at Jupiter: New Insights from Juno, Institut de Recherche en Astrophysique et Planetologie (4/22)

Satellite-Magnetosphere interactions at Jupiter: New Insights from Juno, University of Michigan (2/22)

The Moon's Response to the Interplanetary Meteoroid Environment, TSU Mini-Moon Seminars, Taiwan Space Union (6/21)

Moon-Magnetosphere interactions at Jupiter: New Insights from Juno, Thunch, Princeton University (2/21)

Moon-Magnetosphere interactions at Jupiter: New Insights from Juno, Friends of Magnetospheres, University of Colorado Boulder (2/21)

Dust Phenomena Throughout the Solar System, Auburn University, (9/20)

Io's Alfvénic Interaction and Footprint Tail Aurora: New Results from Juno, Boston University, (9/19)

In-Situ Observations Connected to the Io Footprint Tail Aurora, UC Berkeley, (3/18)

The Dust Environment of the Moon, NASA/GSFC, (9/16)

The Lunar Dust Exosphere, Southwest Research Institute, (8/15)

PUBLIC OUTREACH

The Exploration of Pluto: NASA's New Horizons Mission, 5th Grade Class, Kromrey Middle School (4/22)

The Exploration of Pluto: NASA's New Horizons Mission, 5th Grade Class, Kromrey Middle School (2/21)

The Exploration of Pluto: NASA's New Horizons Mission, Astronomy on Tap Princeton, Trenton (3/19)

SERVICE

Reviewer for professional journals, including: Nature, Space Science Reviews, Geophysical Research Letters, Journal of Geophysical Research, Planetary and Space Sciences, Astronomy & Astrophysics, Advances in Space Research, Research in Astronomy and Astrophysics

NASA Review Panels: Group Chief (×3), Panelist (×4), External Reviewer (x8), Executive Secretary (×2)

NASA Subject Matter Expert: NASA Engineering and Safety Center, Lunar Meteoroid Ejecta Model Review Panel

Prison Teaching Initiative: Taught Pre-Calculus and Calculus college courses in NJ State Prison System during 2018-2019 semester, accredited through Raritan Valley Community College.

LunGradCon 2011-2015, NASA Ames Research Center
- Member, Organizing Committee: responsible for organizing the Lunar and Small Bodies Graduate Conference in parallel with the Exploration Science Forum

MEDIA HIGHLIGHTS

Press Release. Cloud Covered (9/21)
<http://parkersolarprobe.jhuapl.edu/News-Center/Show-Article.php?articleID=168>

Press Release. Satellite in sun's backyard unravels the origins of interplanetary dust (9/21)
<https://www.princeton.edu/news/2021/09/09/satellite-suns-backyard-unravels-origins-interplanetary-dust>

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Astrobiology Magazine. (3/16)
<https://www.astrobio.net/also-in-news/student-built-dust-counter-got-hits-pluto-flyby/>

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<https://blogs.nasa.gov/pluto/2015/12/11/plunging-through-the-solar-systems-dust-disk/>

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Newspaper Article. Meteor showers bring dust clouds on the moon. Los Angeles Times. (6/15)
<http://latimes.com/science/sciencenow/la-sci-sn-moon-dust-clouds-20150617-story.html>

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<https://obamawhitehouse.archives.gov/blog/2015/04/08/we-geeks-journey-pluto>

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<https://blogs.agu.org/geospace/2013/12/10/students-collecting-space-dust-may-help-find-distant-planets/>

**CONFERENCE
PRESENTATIONS**

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Water-group ions from Europa and Ganymede: A window into surface ice evolution, **Szalay, J. R.**, et al., AGU (12/22)

Water-Group Pickup Ions From Europa-Genic Neutrals Orbiting Jupiter, **Szalay, J. R.**, et al., Europlanet Science Conference (9/22)

Closed Fluxtubes and Proton Conics in Jupiter’s Polar Cap, **Szalay, J. R.**, et al., Europlanet Science Conference (9/22)

Water-Group Pickup Ions From Europa-Genic Neutrals Orbiting Jupiter, **Szalay, J. R.**, et al., MOP (7/22)

Closed Fluxtubes and Proton Conics in Jupiter’s Polar Cap, **Szalay, J. R.**, et al., MOP (7/22)

Collisional Evolution of the Inner Zodiacal Cloud: In-Situ observations from PSP and implications for Airless Body Surfaces, **Szalay, J. R.**, et al., EGU (5/22)

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Collisional Evolution of the Inner Zodiacal Cloud: In-Situ observations from PSP’s first 6 orbits, **Szalay, J. R.**, et al., AGU, (12/21)

Nature of Turbulence in the Jovian Magnetosheath from Juno Data, Bandyopadhyay, R., ... **Szalay, J. R.**, ... AGU, (12/21)

In Situ, Composition Separated Ion Observations in Ganymede’s Magnetosphere, Valek, P. W., ... **Szalay, J. R.**, ..., AGU, (12/21)

Magnetic Signatures associated with Dust Impacts on Parker Solar Probe, Gasque, L. C., ... **Szalay, J. R.**, ..., AGU, (12/21)

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Anomalous Interplanetary Dust Populations and Dust Impact Directionality Observed by Parker Solar Probe, Pusack, A., ... **Szalay, J. R.**, ..., AGU, (12/21)

The imerging dynamic and multiple neutral tori systems of Jupiter, Smith, H. T., **Szalay, J. R.**, et al., AGU, (12/21)

The Lunar Meteoroid Monitor (LMM), Horányi, M., M., ... **Szalay, J. R.**, ..., AGU, (12/21)

Determining the Near-instantaneous Curvature of Earth’s Bow Shock Using Simultaneous IBEX and MMS Observations, Starkey, M., ... **Szalay, J. R.**, ..., AGU, (12/21)

Range of Plasma Conditions at Ganymede, Bagenal, F., ... **Szalay, J. R.**, ..., AGU, (12/21)

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Properties of turbulent Alfvénic fluctuations and wave-particle interaction associated with Io's footprint tail, Janser, S., ... **Szalay, J. R.**, ... Magnetospheres of Outer Planets (7/21)

Electron densities measured at high-latitudes on Io torus field lines: Observations from Juno Waves, Elliott, S. S., ... **Szalay, J. R.**, ... Magnetospheres of Outer Planets (7/21)

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Decametric emission induced by interactions between the Galilean moons and the Jovian magnetosphere: in-situ measurements by Juno, Louis, C. K., ... **Szalay, J. R.**, ..., Magnetospheres of Outer Planets (7/21)

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Electron partial density and temperature over Jupiter's main auroral emission using Juno observations, Allegrini, F., ... **Szalay, J. R.**, ... Magnetospheres of Outer Planets (7/21)

In situ observations of the ion moments above the equatorial ionosphere made by the Juno JADE-I instrument, Valek, P. W., ... **Szalay, J. R.**, ..., Magnetospheres of Outer Planets (7/21)

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An overview of Jovian auroral acceleration processes: emphasis on energetic charged particle observations from NASA's Juno mission, Clark, G., ... **Szalay, J. R.**, ..., AGU, (12/20)

Energetic Particles near the Sun from Parker Solar Probe, Schwadron, N., ... **Szalay, J. R.**, ..., AGU, (12/20)

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Partial electron density and temperature over Jupiter's main auroral emission, Allegrini, F., ... **Szalay, J. R.**, ..., AGU, (12/20)

Measurements of the Jovian high-latitude ionospheric outflow, Valek, P. W., ... **Szalay, J. R.**, ..., AGU, (12/20)

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Io and Ganymede-induced decametric emission: in-situ measurements by Juno, Louis, C. K., ... **Szalay, J. R.**, ..., AGU, (12/20)

Probing the Earth's Magnetosheath Boundaries Using the Interstellar Boundary Explorer Encounters, Hart, S., ... **Szalay, J. R.**, ..., AGU, (12/20)

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Wave-particle interactions at the Io and Enceladus flux tubes: A high-resolution, in-situ parametric study, Sulaiman, A. H., ... **Szalay, J. R.**, ..., AGU, (12/20)

What Science Can an Interstellar Probe Mission at Large Heliocentric Distances Achieve With Remote Imaging and In Situ Dust Measurements?, Lisse, C., ... **Szalay, J. R.**, ..., EPSC, (9/20)

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The Lunar Environment Monitoring Station, Benna, M., Schmerr, N., Sarantos, M., Bailey, H., Gershman, D., Horányi, M., Xialoi, S., **Szalay, J. R.**, EPSC, (9/20)

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Wave-particle interaction in the Io flux tube, Janser, S., Saur, S., **Szalay, J. R.**, Clark, G., EGU, (5/20)

Electron density and temperature over Jupiter's main auroral emission, Allegrini, F., ... **Szalay, J. R.**, ..., EGU, (5/20)

Exploration of resources in permanently shadowed lunar polar regions, Horányi, M., Bernardoni, E., Kempf, S., Sternovsky, Z., **Szalay, J. R.**, EGU, (5/20)

The Effects of Hyperbolic Meteoroids from Parker Solar Probe to the Moon, **Szalay, J. R.**, Pokorny, P., Horányi, M., EGU, (5/20)

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The Multi-Asteroid Encounter Tour with Imaging and Spectroscopy (MANTIS): Mission Design and Prospects for In-Situ Sample Analysis, Rivkin, A. S.; Cohen, B. A.; Barnouin, O. S.; Ernst, C. M.; Chabot, N. L.; Denevi, B. W.; Greenhagen, B. T.; Klima, R. L.; Perry, M.; Sternovsky, Z., **Szalay, J. R.**, Poster, LPSC, (3/20)

Exploration of Resources in Lunar Polar Regions, Horányi, M., Bernardoni, E., Kempf, S., Sternovsky, Z., **Szalay, J. R.**, LPSC, (3/20)

The Lunar Dust Environment, Horányi, M., Bernardoni, E., Carroll, A., Hood, N., Hsu, S., Kempf, S., Pokorny, P., Sternovsky, Z., Szalay, J., Wang, X., The Impact of Lunar Dust on Human Exploration, Poster, (2/20)

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Particle Acceleration by Io's Alfvénic Interaction: New Views from Juno, **Szalay, J. R.**, Allegrini, F., Bagenal, F., Bolton, S., Bonfond, B., Clark, G., Connerney, J. E. P., Crary, F., Ebert, R. W., Ergun, R. E., Gershman, D. J., Gladstone, G. R., Grodent, D., Hinton, P., Hospodarsky, G. B., Hue, V., Imai, M., Kurth, W. S., Kotsiaros, S., Levin, S. M., Louarn, P., Mauk, B., McComas, D. J., Paranicas, C., Saur, J., Sulaiman, A., Thomsen, M. F., Valek, P. W., Wilson, R. J., AGU, Oral, (12/19)

The Near-Sun Dust Environment: Initial Observations from Parker Solar Probe, **Szalay, J. R.**, Pokorný, P., Bale, S. D., Christian, E. R., Goetz, K. Goodrich, K., Hill, M. E., Kuchner, M., Larsen, R., Malaspina, D., McComas, D. J., Mitchell, D., Page, B., Schwadron, N., AGU, Oral, (12/19)

The Interstellar Dust Analyzer: Measuring interstellar and zodiacal dust in-situ, **Szalay, J. R.**, Horányi, M., Sternovsky, Z., Poppe, A. R., Lisse, C. M., Draine, B., Zemcov, M., Beichman, C., Interstellar Probe Workshop, Poster, (10/19)

Impact Ejecta Environment of an Eccentric Asteroid: 3200 Phaethon, **Szalay, J. R.**, Pokorný, P., Horányi, M., Janches, D., Sarantos, M., Srama, M., JpGU, Oral, (5/19)

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In-Situ Dust Measurements onboard an Interstellar Probe, **Szalay, J. R.**, Horányi, M., Sternovsky, Z., Interstellar Probe Workshop, Oral, (10/18)

Meteoroid Bombardment and Impact Gardening in the Lunar Polar Regions, **Szalay, J. R.**, Pokorný, P., Sternovsky, Z., Kupihar, Z., Poppe, A. R., Horányi, M., Lunar Polar Volatiles, Oral, (8/18)

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In-situ Observations above the Io Footpoint Tail Aurora, **Szalay, J. R.**, Bonfond, B., Adriani, A., Allegrini, F., Bagenal, F., Bolton, S., Clark, G., Connerney, J., Ebert, R. W., Ergun, R. E., Gladstone, G. R., Grodent, D., Hospodarsky, G., Hue, V., Kurth, W. S., Kotsiaros, S., Levin, S., Louarn, P., Mauk, B., McComas, D. J., Mura, A., Ranquist, D., Saur, J., Thomsen, M. F., Valek, P., Wilson, R. J., MOP, Oral, (7/18)

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The Response of an Airless Body Surface to Meteoroid Impacts, **Szalay, J. R.**, Horányi, M., Pokorný, P., Janches, D., Sarantos, M., EGU, Poster, (4/18)

– 2017 –

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Probing the Structure of a Meteoroid Shower with an Airless Body's Impact Ejecta, **Szalay, J. R.**, Horányi, M., Lunar Science Forum, Oral, (7/17)

Measurements through the Io Wake Flux Tube with Juno/JADE, **Szalay, J. R.**, Allegrini, F., Bagenal, F., Bolton, S., Clark, G., Connerney, J. E. P., Ebert, R. W., Gershman, D. J., Kurth, W. S., Levin, S., Louarn, P., Mauk, B., McComas, D. J., Paranicas, C., Ranquist, D., Reno, M., Thomsen, M. F., Valek, P. W., Weidner, S., Wilson, R. J., MOP, Poster, (6/17)

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Observations of Jupiter's polar magnetosphere from the Jovian Auroral Distributions Experiment (JADE), Allegrini, F., Valek, P., Bagenal, F., Bolton, S., Clark, G., Connerney, J., Ebert, R., Gladstone, R., Kim, T., Kurth, W., Levin, S., Louarn, P., Loeffler, C., Mauk, B., McComas, D. J., Pollock, C., Ranquist, D., Reno, M., **Szalay, J. R.**, Thomsen, M., EGU, Oral, (4/17)

Using the Moon to Characterize the Near-Earth Meteoroid Environment, **Szalay, J. R.**, Horányi, M., Asteroids, Comets, and Meteors, Oral, (4/17)

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Method to observe O⁺ and S²⁺ by the JADE-I instrument on NASA's Juno mission to Jupiter, Kim, T. K., Valek, P. W., McComas, D. J., Bolton, S. J., Allegrini, F., Angold, N. G., Bagenal, F., Chae, K., Connerney, J. E. P., Ebert, R. W., Levin, S., Loeffler, C. E., Louarn, P., Pollock, C., Ranquist, D. A., Reno, M. L., **Szalay, J. R.**, Thomsen, M. F., Weidner, S., Wilson, R. J., Zink, J. L., AGU, Poster, (12/16)

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Evolution of heliospheric energetic neutral atom emissions over seven years of IBEX observations, Dayeh, M. A., Desai, M. I., Fuselier, S. A., Heerikhuisen, J., McComas, D. J., Schwadron, N., **Szalay, J. R.**, Zirnstein, E., AGU, Oral, (12/16)

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ENA Measurements of the Lunar Surface using LDEX, Walker, J. J., Halekas, J. S., Horányi, M., Lue, C., Poppe, A. R., **Szalay, J. R.**, AGU, Poster, (12/16)

A 1D Forward Model of Solar Wind Conditions Using JADE-I, Wilson, R. J., Bagenal, F., Valek, P. W., McComas, D. J., Bolton, S. J., Allegrini, F., Angold, N. G., Connerney, J. E. P., Chae, K., Ebert, R. W., Kim, T. K., Levin, S., Loeffler, C. E., Louarn, P., Ranquist, D. A., Reno, M. L., **Szalay, J. R.**, Weidner, S., Zink, J. L., AGU, Poster, (12/16)

Inferred contributions of the solar wind and micrometeoroids to metallic species in the lunar exosphere from LADEE data and models, Sarantos, M., Colaprete, A., **Szalay, J. R.**, Halekas, J. S., Wooden, D. H., Horányi, M., Janches, D., AGU, Poster, (12/16)

Electron measurements by the Jovian Auroral Distributions Experiment-Electrons (JADE-E) on the Juno Mission to Jupiter, Allegrini, F., Bagenal, F., Bolton, S. J., Connerney, J. E. P., Ebert,

R. W., Clark, G. B., Kurth, W. S., Levin, S., Louarn, P., Mauk, B., McComas, D. J., Reno, M. L., **Szalay, J. R.**, Thomsen, M. F., Valek, P. W., Weidner, S., Wilson, R. J., AGU, Oral, (12/16)

Generation and Migration of Potassium in the Lunar Exosphere, Sarantos, M., Colaprete, A., **Szalay, J. R.**, Halekas, J. S., Wooden, D. H., Horányi, M., Janches, D., LEAG, Poster, (11/16)

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