

(+1) 626-517-7495  
Pasadena, USA  
zigongxu92@gmail.com, zgxu@caltech.edu

- Wensai Shang, Ji Liu, **Zigong Xu**(first authors) et al (2024) Evidence for a galactic cosmic ray cavity in Earth-Moon space, under review
- **Xu Z**, et. al, Solar Orbiter EPD measurements of Anomalous cosmic ray Helium-4 in the inner heliosphere from 0.3 AU to 1 AU, under review
- **Z. G. Xu**, et al "Parker Solar Probe observations of solar energetic particle (SEP) events with inverse velocity arrival (IVA) features", under review.

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# Zigong Xu

GitHub: ZigongXu

LinkedIn: zigongxu

- **Z. G. Xu**, CM S Cohen, RA Leske, GD Muro, AC Cummings, DJ McComas, NA Schwadron, ER Christian, ME Wiedenbeck, RL McNutt, DG Mitchell, GM Mason, A Kouloumvakos, RF Wimmer-Schweingruber, GC Ho, J Rodriguez-Pacheco(2024), "Composition Variation of the 2023 May 16 Solar Energetic Particle Event Observed by SolO and PSP". [ApJL 2024 976 L3](#)
- **Xu Z**, Guo J, Wimmer-Schweingruber RF, Dobynde MI, Kühl P, Khaksarighiri S and Zhang S (2022), "Primary and albedo protons detected by the Lunar Lander Neutron and Dosimetry experiment on the lunar farside". [Front. Astron. Space Sci. 9:974946](#)
- **Zigong Xu**, Jingnan Guo, Robert F. Wimmer-Schweingruber, *et al.* (2020), "First Solar Energetic Particles Measured on the Lunar Far-side", [The Astrophysical Journal Letters](#), 902 (2), L30
- **Zigong Xu**, Chuan Li, Mingde Ding, "Observations of a Coronal Shock Wave and the Production of Solar Energetic Particles", [The Astrophysical Journal](#), 2017, 840 (1), 38
- Jingnan Guo, Xiaolei Li, Jian Zhang, Mikhail I Dobynde, Yuming Wang, **Zigong Xu**, Thomas Berger, Jordanka Semkova, Robert F Wimmer-Schweingruber, *et al.* (2023), "The first ground level enhancement seen on three planetary surfaces: Earth, Moon, and Mars", [Geophysical Research Letters](#), 50, e2023GL103069
- R. F. Wimmer-Schweingruber, N. Janitzek, D. Pacheco, I. Cernuda, F. Espinosa Lara, R. Gómez-Herrero, G. M. Mason, R. C. Allen, **Z. G. Xu**, F. Carcaboso, A. Kollhoff, P. Kühl, J. L. Freiherr von Forstner, L. Berger, J. Rodriguez-Pacheco, G. C. Ho, *et al.* (2021), "First year of energetic particle measurements in the inner heliosphere with Solar Orbiter's Energetic Particle Detector", [A&A 656, A22 \(2021\)](#), Solar Orbiter First Results (Cruise Phase) Special issue
- R. C. Allen, I. Cernuda, D. Pacheco, L. Berger, **Z. G. Xu**, *et al* (2021), "Energetic Ions in the Venusian System: Insights from the First Solar Orbiter Flyby", [A&A 656, A7 \(2021\)](#), Solar Orbiter First Results (Cruise Phase) Special issue
- G. M. Mason, G. C. Ho, R. C. Allen, **Z. G. Xu**, *et al.* (2021), "Quiet-time low energy ion spectra observed on Solar Orbiter during solar minimum", [A&A 656, L5 \(2021\)](#), Solar Orbiter First Results (Cruise Phase) Special issue

## Other co-author papers

- G.D.Muro, C.M.S.Cohen, **Z. Xu**, *et al*, Radial Dependence of Ion Fluences in the 2023 July 17 Solar Energetic Particle Event from Parker Solar Probe to STEREO and ACE, [The Astrophysical Journal](#), 981:8 (10pp), 2025 March 1
- C. M. S. Cohen, **Z. G. Xu**, *et al*, Longitudinal Dependence of Heavy Ion Composition in the 2021 October 28 Ground Level Enhancement Event, [The Astrophysical Journal Letters](#), 978:L35 (6pp), 2025 January 10
- L. Yang, ..., **Z. Xu**, *et al*, Dynamic acceleration of energetic protons by an interplanetary collisionless shock, [Astronomy and Astrophysics](#), 686, A132 (2024)
- G. Livadiotis, ..., **Z. Xu**, *et al*, Kappa-tail Technique: Modeling and Application to Solar Energetic Particles Observed by Parker Solar Probe, [The Astrophysical Journal](#), 973:6 (13pp), 2024 September 20.
- M. E. Cuesta, ..., **Z. Xu**, *et al*, Observations of Kappa Distributions in Solar Energetic Protons and Derived Thermodynamic Properties, [The Astrophysical Journal](#), 973:76 (10pp), 2024 October 1
- C. M. S. Cohen, ..., **Z. G. Xu**, *et al*, Observations of the 2022 September 5 Solar Energetic Particle Event at 15 Solar Radii, [The Astrophysical Journal](#), 966:148 (13pp), 2024 May 10
- Robert F. Wimmer-Schweingruber ... **Zigong Xu**, Unusually long path length for a nearly scatter-free solar particle event observed by Solar Orbiter at 0.43 au, [Astronomy and Astrophysics](#), 678, A98 (2023)
- R. Bučík ... **Z. G. Xu**, The first gradual solar energetic particle event with an enhanced 3He abundance on Solar Orbiter, [Astronomy and Astrophysics](#), 669, A13 (2023)
- Yang L, Heidrich-Meisner V, Berger L, ... **Xu Z**, *et al.* Acceleration of suprathermal protons near an interplanetary shock. [Astronomy and Astrophysics](#), 2023, 673: A73.
- Nina Dresing, ... **Zigong Xu**, *et al*, The 17 April 2021 widespread solar energetic particle event, [Astronomy and Astrophysics](#), 674, A105 (2023)

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LinkedIn: zigongxu

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- Alexander Kollhoff, Lars Berger, Maximilian Brüdern, Nina Dresing, ..., **Zigong Xu** (2023), "Multi-spacecraft observations of near-relativistic electron events at different radial distances", *A&A*, 675, (2023) A155
  - David Lario, Nicolas Wijsen, Ryun Young Kwon, Beatriz Sánchez-Cano, IG Richardson, Daniel Pacheco, ..., **Zigong Xu**, Alexander Kollhoff (2022), "Influence of Large-scale Interplanetary Structures on the Propagation of Solar Energetic Particles: The Multispacecraft Event on 2021 October 9" *The Astrophysical Journal*, 934:55, 2022
  - Robert F. Wimmer-Schweingruber, ..., **Zigong Xu**, et al, Advances in energetic particle physics with Solar Orbiter, Proceedings of Science, (2022)
  - Wang chi, Li Lei, ..., **Xu zigong**, et al 2022, Journal of Deep Space Exploration, "The Solar Wind and Particle Radiation Environment on the Surface of the Moon—New Observations from Chang'E-4", Journal of Deep Space Exploration
  - J. L. Freiherr von Forstner, M. Dumbović, C. Möstl, J. Guo, A. Papaioannou, R. Elftmann, **Z. G. Xu**, et al (2021), "Radial evolution of the April 2020 stealth coronal mass ejection between 0.8 and 1 AU. Comparison of Forbush decreases at Solar Orbiter and near the Earth", *A&A* 656, A1, Solar Orbiter First Results (Cruise Phase) Special issue
  - Zhang, S., Hou, D., Wimmer-Schweingruber, R. F., Sun, Y., Wang, C., Chang, Z., **Xu Z.**, Shen G., Yuan B. Xue, C. (2021). Radiation Dose of LND on the Lunar Surface in Two Years. *Chinese Journal of Space Science*, 41(3), 439-444
  - A. Kollhoff, A. Kouloumvakos, D. Lario, N. Dresing, R. Gómez-Herrero, ..., **Z. G. Xu**, et al (2021), "The first widespread solar energetic particle event observed by Solar Orbiter on 2020 November 29", *A&A* 656, A20 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - A. Aran, D. Pacheco, ... **Z. G. Xu** et al (2021), "Evidence for local particle acceleration in the first recurrent galactic cosmic ray depression observed by Solar Orbiter- The ion event on 19 June 2020", *A&A* 656, L10 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - R. Gómez-Herrero, D. Pacheco, A. Kollhoff, ..., **Z. Xu** et al (2021), "First near-relativistic solar electron events observed by EPD onboard Solar Orbiter", *A&A* 656, L3 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - R. C. Allen, G. M. Mason, G. C. Ho, ..., **Z. Xu** et al (2021), "Suprathermal particles from corotating interaction regions during the first perihelion pass of Solar Orbiter", *A&A* 656, L2 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - R. Bučík, G. M. Mason, R. Gómez-Herrero, ..., **Z. G. Xu**, et al (2021), "The long period of 3He-rich solar energetic particles measured by Solar Orbiter 2020 November 17–23", *A&A* 656, L11 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - G. M. Mason, C. M. S. Cohen, G. C. Ho, D. G. Mitchell, R. C. Allen, M. E. Hill, ..., **Z. G. Xu**, et al (2021), "Solar energetic particle heavy ion properties in the widespread event of 2020 November 29", *A&A* 656, L12 (2021), Solar Orbiter First Results (Cruise Phase) Special issue
  - Robert F. Wimmer-Schweingruber, Jia Yu, ... **Z. G. Xu** et al (2020), "The Lunar Lander Neutron and Dosimetry (LND) Experiment on Chang'E 4", *Space Science Reviews* 216 (6), 1-40
  - Shenyi Zhang, Robert F. Wimmer-Schweingruber, ..., **Z. G. Xu** et al (2020), "First measurement of the radiation dose on the lunar surface", *Science Advances* 6 (39), eaaz1334
  - W. H. Lei, C. Li, F. Chen, S. J. Zhong, **Z. G. Xu** and P. F. Chen (2020), Do the solar flares originating from an individual active region follow a random process or a memory-dependent correlation?, *Monthly Notices of the Royal Astronomical Society* 494 (1), 975-982.
  - C. Li, S. J. Zhong, **Z. G. Xu** et al (2018), Waiting time distributions of solar and stellar flares: Poisson process or with memory?, *MNRAS*, 479, L139.

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## PROFESSIONAL EXPERIENCE/TALKS/POSTER (SELECTED)

- AGU Fall meeting 2025, Dec, **invited talk**, *Multi-spacecraft observations of solar energetic particle events with inverse velocity arrival (IVA) features: PSP and SolO*
- AGU Fall meeting 2024, 9-13, Dec, 2024, poster, *Inverse velocity arrival (IVA) feature of solar energetic particle events SH33C-2743*
- *Cospar* 2024, 12-19, July, 2024, oral, *Composition variations in the May 16, 2023 solar energetic particle event.*
- *AGU Fall meeting* 2023, 11-15, Dec, 2023, oral, *Combined investigation on Solar Energetic Particle (SEP) events: Insights from SOLO, PSP, and observers at 1 au*
- Solar Orbiter NASA/GSFC Workshop (24-25-26 October 2023) *Solar Orbiter EPD measurements of cosmic rays in the inner heliosphere from 0.3 AU to 1 AU*
- *AGU Fall meeting* 2022, 12-16, Dec 2022, oral, online, *Solar Orbiter EPD measurements of ACR and GCR in the inner heliosphere from 0.3 AU to 1 AU*
- *COSPAR ATHENS 2022, 44th Scientific Assembly*, 16-24, July 2022, oral, *Primary and albedo protons measured by the Chang'E 4 Lunar Lander Neutron and Dosimetry (LND) experiment on the lunar far side*
- *AGU Fall meeting* 2021, oral, online, *P51B-02 - Primary and albedo protons measured by the Chang'E 4 Lunar Lander Neutron and Dosimetry (LND) experiment on the lunar far side*
- *EGU General Assembly 2021*, oral, online, *The High Energy Telescope (HET) on the SolarOrbiter Mission: Overview and First Data*
- *4th Institute Space Science Summer School- Artificial Intelligence for Astronomy*, Institute of Space Sciences Barcelona-Spain (Virtual), 2021.7.12-16
- *AGU Fall meeting* 2020, oral, online, *First Solar Energetic Particles Measured On The Lunar Far-side*
- *EGU General Assembly 2020*, oral, online, *First Solar Energetic Particles Measured On The Lunar Far-side*
- *AGU Fall meeting* 2019, poster, San Francisco, *SH41D-3340 - Energetic particles measurements on the lunar far side by Lunar Lander Neutron and Dosimetry(LND) experiment*
- *Summer school: Exploring the physics of planetary environments*, KTH, Stockholm, Sweden, 2019.8.13-22
- *The 4th Asia-Pacific Solar Physics Meeting (APSPM2017)*, oral, Japan, *Observations of the CME shocks and the production of SEPs*

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## GRANTS, AWARDS, AND HONORS

- National Aeronautics and Space Administration Group Achievement Award of Parker Solar Probe Team
- 2017 National scholarship for graduate students
- 2016 Excellent Student Cadre
- 2015 Outstanding Graduates Awards

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## TEACHING, MENTORING, AND OUTREACH

- **Outreach**
  - Popular science book translation: *The Sun (Kosmos)* and *Traveller's Guide to Mars*
- **Mentoring**
  - Mentor of First-Year Success Research Institute(FSRI) 2025 Summer.
  - Mentor of the summer internship for high school student (minor) at Caltech: Julian Du (2024/25), Kexuan Wang (2025, now at), LND SEP data analysis
  - Interns from Ricarda-Huch-Schule (2019/04-2019/06): Python usage and data analysis of Chang'E-4/LND and MSL/RAD measurements
- **Journal reviewer:** ApJ, GRL, PSS, Advances in Space Research (AISR), Results in Engineering, Scientific Data, Support NASA HGIO panel review.

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## PERSONAL INTERESTS/ADDITIONAL ACTIVITIES

**Hobbies** Volleyball referee with license, diving, ice skating,