

JIAZHENG LI

Space Science Institute, Macau University of Science and Technology, Macau, China

+853 63232427 | e: jzli@must.edu.mo

EDUCATION

California Institute of Technology	Pasadena, California, USA
PhD in Planetary Sciences	October 2017 – June 2022
Peking University	Beijing, China
BS in Space Science and Technology	September 2013 – July 2017

RESEARCH POSITION

Macau University of Science and Technology	Macau, China
Assistant Professor	January 2025 – present
University of Michigan, Ann Arbor	Ann Arbor, Michigan, USA
Postdoc Associate	August 2022 – December 2024

RESEARCH EXPERIENCE

Macau University of Science and Technology	Macau, China
Global distribution of the key non-water species on Europa	2024 – present
Dynamical heating in the Martian thermosphere	2024 – present
University of Michigan, Ann Arbor	Ann Arbor, Michigan, USA
Evolution of the dust storms on Mars	2022 – present
Sulfur chemistry on the surface ice of Europa	2022 – 2024
The structure of the surface ice on Ganymede	2023 – 2024
California Institute of Technology	Pasadena, California, USA
Localizing methane sources in Gale crater using a multi-detector strategy	2021 – 2022
Rotation period detection for Earth-like exoplanets	2020 – 2021
Oxidants sources on Europa	2017 – 2022
Sulfur monoxide dimer chemistry as a possible source of polysulfur in the upper atmosphere of Venus	2020 – 2022
Numerical calculation of the atmospheric tide on Venus and its tidal torque	2018 – 2022
Study of terrestrial glints based on DSCOVR observations	2017 – 2018

PUBLICATIONS

1. **Li, J.***, & Li, C. (2023). Sulfur chemistry on the surface ice of Europa. *Icarus*, 394, 115438.
2. **Li, J.***, Gudipati, M. S., Mishra, Y. N., Liang, M.-C. and Yung, Y. L. (2022). Oxidants Generation in the Ice under Electron Irradiation: Simulation and Application to Europa. *Icarus*, 373, 114760.
3. **Li, J.***, Jiang, J. H., Yang, H., Abbot, D. S., Hu, R., Komacek, T. D., Bartlett, S. J. and Yung, Y. L. (2021). Rotation Period Detection for Earth-like Exoplanets. *The Astronomical Journal*, 163(1), 27.
4. Bartlett, S., **Li, J.**, Gu, L., Sinapayen, L., Fan, S., Natraj, V., ... & Yung, Y. L. (2022). Assessing planetary complexity and potential agnostic biosignatures using epsilon machines. *Nature Astronomy*, 6(3), 387-392.
5. Pinto, J. P., **Li, J.***, Mills, F. P., Marcq, E., Evdokimova, D., Belyaev, D., & Yung, Y. L. (2021). Sulfur monoxide dimer chemistry as a possible source of polysulfur in the upper atmosphere of Venus. *Nature Communications*, 12(1), 1-6.
6. Gu, L., Fan, S., **Li, J.**, et al. (2020). Earth as a Proxy Exoplanet: Deconstructing and Reconstructing Spectrophotometric Light Curves. *The Astronomical Journal*, 161(3), 122.
7. **Li, J.***, Gudipati, M. S., and Yung, Y. L. (2020). The influence of Europa's plumes on its atmosphere and ionosphere. *Icarus*, 352, 113999.

8. S. Fan, C. Li, **J. -Z. Li**, S. Bartlett, J. H. Jiang, V. Natraj, D. Crisp and Yuk L. Yung (2019). Earth as an Exoplanet: A Two-dimensional Alien Map. *The Astrophysical Journal Letters*, 882(1), L1.
9. **Li, J.-Z.***, Fan, S., Kopparla, P., Liu, C., Jiang, J. H., Natraj, V., & Yung, Y. L. (2019). Study of terrestrial glints based on DSCOVR observations. *Earth and Space Science*, 6(1), 166-173.
10. Jiang, J. H., Zhai, A. J., Herman, J., Zhai, C., Hu, R., Su, H., Natraj, V., **Li, J.**, Xu, F. and Yung, Y. L. (2018). Using deep space climate observatory measurements to study the Earth as an exoplanet. *The Astronomical Journal*, 156(1), 26.
11. **Li, J. Z.**, Zhou, X. Z., Runov, A., Angelopoulos, V., Liu, J., Pan, D. X., & Zong, Q. G. (2017). Characteristics of high-latitude precursor flows ahead of dipolarization fronts. *Journal of Geophysical Research: Space Physics*, 122(5), 5307-5320.
12. **Li, J. Z.**, Zhou, X. Z., Angelopoulos, V., Liu, J., Runov, A., Pan, D. X., & Zong, Q. G. (2016). Contribution of ion reflection to the energy budgets of dipolarization fronts. *Geophysical Research Letters*, 43(2), 493-500.
13. Zhou, X. Z., Pan, D. X., Angelopoulos, V., Liu, J., Runov, A., Li, S. S., **J.-Z. Li**, Q.-G. Zong, and S. Y. (2015). Ion acceleration and reflection on magnetotail antidipolarization fronts. *Geophysical Research Letters*, 42(21), 9166-9175.
(*corresponding author)

MANUSCRIPTS IN PREPARATION

1. **Li, J.**, Li, C., Zhang, Z. Thickness of the sulfuric acid contaminated ice layer on Ganymede.
2. **Li, J.**, Bougher, S., Li, C. The influence of the dust storm on the thermospheric dynamical heating in Mars' southern hemisphere.
3. **Li, J.**, Shou, Y., Li, C. The global distribution of the key species on the surface of Europa.

CONFERENCE TALKS & POSTERS

1. **Li, J.** et al. (2024), Global distribution of the key non-water species on Europa. *AGU Fall Meeting 2024*, Washington DC, USA.
2. **Li, J.** et al. (2023), Sulfur chemistry on the surface ice of Europa. *LPSC 2023*, The Woodlands, USA.
3. **Li, J.** et al. (2022), A possible candidate of the enigmatic ultraviolet absorber(s) in the upper atmosphere of Venus. *DPS 54*, Online.
4. **Li, J.** et al. (2021), Localizing methane sources in Gale crater using a multi-detector strategy. *AGU Fall Meeting 2021*, **P23B-04**, Online
5. **Li, J.** et al. (2021), Rotation Period Detection for Earth-like Exoplanets. *DPS 53*, **305.05**, Online.
6. **Li, J. -Z.** et al. (2020), Investigation of the unknown UV absorber(s) in the atmosphere of Venus using a chemistry-transport model in combination with a radiative transfer model. *AGU Fall Meeting 2020*, **P018-08**, Online
7. **Li, J.** et al. (2020), Simulating Oxidant Generation in Ice under Electron Irradiation. *DPS 52*, **109.04**, Online.
8. **Li, J.-Z.** et al. (2019), Oxygen sources on Europa. *AGU Fall Meeting 2019*, **P11C-3474**, San Francisco, USA
9. **Li, J.** et al. (2018), The oxidants of Europa's surface induced by Europa's radiative environment. *DPS 50*, **416.02**, Knoxville, USA
10. **Li, J.** et al. (2018), Application of terrestrial glints to exoplanet studies. *COSPAR 42*, **B0.1-0003-18**, Pasadena, USA
11. **Li, J.-Z.** et al. (2016), Characteristics of high latitude precursor flows ahead of dipolarization fronts. *AGU Fall Meeting 2016*, **SM51B-2476**, San Francisco, USA
12. **Li, J.-Z.** et al. (2016), Contribution of ion reflection to the energy budgets of dipolarization fronts. *AOGS 13*, **ST02-10-A010**, Beijing, China

TEACHING EXPERIENCE

California Institute of Technology

Pasadena, California, USA

Ge 103, Introduction to the Solar System (Teaching assistant)

Summer 2021

Ge 159, Astrobiology (Guest lecturer)

Winter 2020

Ge 150, Planetary atmosphere (Teaching assistant)

Spring 2019, Spring 2020