

Xinting Yu

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Current Position

University of Texas at San Antonio <i>Assistant Professor, Department of Physics and Astronomy</i> <i>Affiliated Faculty, Center for Advanced Measurements in Extreme Environments</i>	San Antonio, TX, USA 2023–present 2023–present
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Education

Johns Hopkins University <i>PhD in Planetary Science</i>	Baltimore, MD, USA 2014–2019
University of Science and Technology of China <i>BS in Space Physics with honors</i>	Hefei, Anhui, China 2010–2014

Research Experience

University of California Santa Cruz <i>51 Pegasi b Postdoctoral Fellow (Supervisor: Xi Zhang, Jonathan Fortney)</i> Laboratory characterization of planetary materials, modeling cloud-haze interactions and cloud formation on Titan and exoplanets, photochemical modeling in sub-Neptune atmospheres	Santa Cruz, CA 2019–2022
Johns Hopkins University <i>Graduate Research Assistant (Advisor: Sarah Hörst)</i> Laboratory production and characterization of Titan aerosol analogs ("tholins") and the effect on sediment transport and dune formation on Titan	Baltimore, MD 2014–2019
NASA Ames Research Center <i>Visiting Student (Collaborators: Nathan Bridges, Devon Burr, James Smith)</i> Sediment transport on Titan using the Titan Wind Tunnel	Mountain View, CA 2015 & 2016 Summer
Key Laboratory of Solar Activity, National Astronomical Observatories <i>Undergraduate Research Assistant (Advisor: Jun Zhang)</i> Investigation of cyclones in the quiet Sun using SDO/AIA and HMI data	Beijing, China 2013–2014

Honors and Awards

- NASA Planetary Science Early Career Award (ECA), 2023-2028
- Outstanding mentorship of 2 UCSC undergraduate students, Chancellor's Undergraduate Research Awards (2 out of 15 awardees at UCSC), 2022
- UCSC Graduate Division Outstanding Postdoctoral Scholar Award, 2022
- 51 Pegasi b Postdoctoral Fellowship, Heising-Simons Foundation, 2019–2022

- Stephen E. Dwornik Award at the 49th Lunar and Planetary Science Conference – Best Graduate Oral Presentation, 2018
- JHU EPS Journal Club Long Presentation Award (\$2,000), 2018
- Johns Hopkins University 2018-19 Technology Fellowship (\$5,000)
- Johns Hopkins University 2018-19 Dean’s Teaching Fellow (\$11,500)
- Johns Hopkins University Shark Tank Education Innovation Competition (\$3,000), Winner, 2016
- Johns Hopkins University Owen Scholars Award (\$6,000/yr, 3yrs), 2014
- University of Science and Technology of China (USTC), Outstanding Bachelor Thesis, 2014
- USTC, Outstanding Award in Undergraduate Research Program, 2013

Invited Seminars and Colloquia

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| ○ Texas A&M University, Department of Geology & Geophysics seminar series | <i>Nov 2024</i> |
| ○ Georgia Institute of Technology, Planetary & Astrobiology seminar | <i>Sept 2024</i> |
| ○ Brown University, DEEPS seminar | <i>May 2024</i> |
| ○ Caltech, GPS Division Seminar | <i>Feb 2024</i> |
| ○ University of Texas Institute for Geophysics (UTIG) seminar series | <i>Sept 2023</i> |
| ○ Rocky World Discussions, Monthly Virtual Meeting Series | <i>Apr 2023</i> |
| ○ University of Texas San Antonio, Graduate Seminar in Geology | <i>Mar 2023</i> |
| ○ University of Texas San Antonio, Physics and Astronomy Seminar | <i>Feb 2023</i> |
| ○ Caltech, Division of Geological and Planetary Sciences, Yuk Lunch Seminar | <i>Dec 2022</i> |
| ○ Network for Ocean Worlds, NOW Lecture Series | <i>Dec 2022</i> |
| ○ MIT, Department of Earth, Atmospheric and Planetary Sciences, DLS seminar | <i>Nov 2022</i> |
| ○ Jet Propulsion Laboratory, Planetary Science Seminars | <i>Sep 2022</i> |
| ○ Columbia University, Department of Astronomy and Astrophysics | <i>Mar 2022</i> |
| ○ University of Wisconsin Madison, Department of Astronomy | <i>Mar 2022</i> |
| ○ Rice University, Department of Earth, Environmental, and Planetary Sciences | <i>Feb 2022</i> |
| ○ Pennsylvania State University, Department of Astronomy and Astrophysics | <i>Feb 2022</i> |
| ○ University of Texas San Antonio, Department of Physics and Astronomy | <i>Jan 2022</i> |
| ○ University of Arizona, Lunar and Planetary Laboratory Colloquium | <i>Nov 2021</i> |
| ○ NASA Goddard Research Center, Exoplanet seminar series | <i>July 2021</i> |
| ○ Ohio State University, Exoplanet talk series | <i>July 2021</i> |
| ○ NASA Ames Research Center, Astrophysics Branch | <i>March 2020</i> |
| ○ University of California Berkeley, Astronomy, CIPS seminar | <i>Feb 2020</i> |
| ○ University of California Santa Cruz, Earth and Planetary Sciences, WES seminar | <i>Feb 2020</i> |
| ○ University of Central Florida, Florida Space Institute | <i>Feb 2020</i> |
| ○ University of California Santa Cruz, Physics, Condensed Matter seminar | <i>Jan 2020</i> |
| ○ University of California Santa Cruz, Earth and Planetary Sciences, IGPP seminar | <i>Feb 2019</i> |

Teaching and Mentoring Experience

Instructor.....

University of Texas at San Antonio	San Antonio, TX
<i>PHYS.3343 Physics Research Laboratory</i>	<i>Spring 2023</i>
<i>AST.1033.002 Exploration of the Solar System (New Course)</i>	<i>Fall 2023, 2024</i>
Johns Hopkins University (Dean's Teaching Fellowship)	Baltimore, MD
<i>AS.270.328 Planetary Exploration: Techniques and Data Analysis (New Course)</i>	<i>Fall 2018</i>

Guest Lecturer.....

Johns Hopkins University	Baltimore, MD
<i>AS.270.114 Guided Tour of the Planets (2 lectures)</i>	<i>Spring 2019</i>
<i>AS.270.335 Planets, Life and the Universe (1 lecture)</i>	<i>Fall 2018</i>
<i>AS.270.114 Guided Tour of the Planets (1 lecture)</i>	<i>Spring 2018</i>
<i>AS.270.410 Planetary Surface Processes (1 lecture)</i>	<i>Fall 2017</i>
<i>AS.270.366 Spacecraft Instrumentation Project (1 lecture)</i>	<i>Spring 2017</i>
<i>AS.270.114 Guided Tour of the Planets (1 lecture)</i>	<i>Spring 2017</i>
<i>AS.270.114 Guided Tour of the Planets (1 lecture)</i>	<i>Spring 2016</i>

Teaching Assistant.....

Johns Hopkins University	Baltimore, MD
<i>AS.270.114 Guided Tour of the Planets</i>	<i>Spring 2019</i>
<i>AS.270.114 Guided Tour of the Planets</i>	<i>Spring 2018</i>
<i>AS.270.335 Planets, Life and the Universe</i>	<i>Fall 2017</i>
<i>AS.270.114 Guided Tour of the Planets</i>	<i>Spring 2017</i>
<i>AS.270.103 Introduction to Global Environmental Change</i>	<i>Fall 2016</i>
<i>AS.270.114 Guided Tour of the Planets</i>	<i>Spring 2016</i>

Teaching Grants.....

Johns Hopkins University	Baltimore, MD
<i>Dean's Teaching Fellowship: new designed course AS.270.328 Planetary Exploration</i>	<i>Fall 2018</i>
<i>Restructure AS.270.114 Guided Tour, Technology fellowship</i>	<i>Spring 2019</i>
<i>Restructure AS.270.114 Guided Tour, Shark Tank Education Innovation Competition</i>	<i>Winter 2017</i>

Mentored Students.....

- University of Texas at San Antonio (current group members, 2023–present) San Antonio, TX
- **Adis Husic** (*2nd year PhD Student, Physics*): Characterization of Titan haze analogs using a new experimental setup.
 - **Cindy Luu** (*2nd year PhD Student, Physics*): Does sub-Neptunes have supercritical ocean?
 - **Eric Austin** (*1st year PhD Student, Physics*): Characterizing the physical properties of interstellar organics to understand planet formation.
 - **Allen (Boshu) Qiao** (*Senior, Physics*): Expanding and archiving the Titan material database with the NASA Planetary Data System (PDS).
 - **Emran Ismail** (*Senior, Physics*): Trends in exoplanet haziness with JWST.

- **Ricardo Vega** (*Junior, Physics*): Comparative study of the mechanical properties of organics on Titan.
- **Reggie Delaney** (*Junior, Physics*): Building a vacuum furnace system for exoplanet/Venus research.
- **Phillip Doubleday** (*Junior, Physics*): 3D printing of asteroid shape models.

Postdocs.....

University of Texas at San Antonio (current group members, 2024–present) San Antonio, TX

- **Dr. Jose Raul Montes Bojorquez** (*2024-present*): Characterizing the optical properties of Titan and exoplanet haze analogs.

- **Dr. Sara Port** (*2024-present*): Mineral-gas interactions in warm exoplanet atmospheres.

University of California Santa Cruz (former group members, 2019–2023) Santa Cruz, CA

- **Ziyu Huang** (*University of Southern California PhD '23, Aerospace Engineering*): Identify surfaces on cool exoplanets. Ziyu is currently a postdoc at Georgia Tech.

- **Mary Kelly** (*UTSA undergrad, Physics*): Archiving the optical constants of gas tholins.

- **Beauxregard Martinez** (*UTSA undergrad, Environmental Science*): Flocculation of organic sediments in methane rivers on Titan.

- **Charles Cordts** (*UTSA undergrad '24, BS Physics*): Flocculation of organic sediments in methane rivers on Titan. Charles is now a grad student at the University of Akron.

- **Eric Austin** (*UTSA undergrad '24, BS Physics*): Comparison study on the surface energies of Titan haze analogs. Eric is now a grad student at UTSA.

- **Erik White** (*UCSC undergrad '23, BS EPS*): Comparison study on the surface energies of Titan haze analogs & Flocculation experiments on Titan. Erik is now a geologist.

- **Jolie Wolff** (*UCSC undergrad '23, BS EPS*): Deciphering the chemical composition of ice clouds on Titan.

- **Vanessa Mendoza** (*UCSC undergrad '23, BS EPS*): Haze evolution on eccentric exoplanets. Vanessa is currently a grad student at Western Washington University.

- **Jialin Li** (*UCSC undergrad '22, BS Physics, Chancellor's Undergraduate Research Award*): Comparison study on the surface energies of Titan haze analogs & Understanding the effect of surfaces on the compositions of exoplanet atmospheres. Jialin is currently an NSF Graduate Research Fellow at the University of Arizona.

- **Austin Dymont** (*UCSC undergrad '22, BS physics, Chancellor's Undergraduate Research Award*): Trends in haziness of temperate exoplanets & Decipher the nature of super-puffy exoplanets. Austin is currently a grad student at the University of Chicago.

- **Ethan Romo** (*UCSC undergrad '22, BS EPS*): Comparison study on the mechanical properties of Titan haze analogs. Ethan is currently a technician at Compatible Electronics.

- **Julia Garver** (*UCSC undergrad '21, BS astrophysics*): Cloud formation on Titan. Julia is currently an aerospace engineer.

- **Taylor Duncan** (*UCSC undergrad '21, BS EPS*): Outgassing experiments of carbonaceous chondrites. Taylor is currently a grad student at the University of Western Ontario.

- **Yue (Yuna) Yu** (UCSC undergrad '20, BS EPS): Aerosol-Cloud-Lake Interactions on Titan. Yuna is currently a grad student at the University of Geneva.
- **Kyle Kim** (UCSC undergrad '19, BS EPS): Outgassing experiments of carbonaceous chondrites. Kyle is currently a grad student at the University of Maryland.
- **Connor Dickinson** (UCSC undergrad, astrophysics): Interactive website for trends in exoplanet haziness.
- **Abigale Hawthorn** (UCSC undergrad, astrophysics): Interactive website for material properties of organics liquids, ices, and solids on Titan.
- **Amaan Khwaja** and **Yash Rajpal** (high-school students): Interactive website for trends in the haziness of cool exoplanets, [Link](#).
- **Francesca Tom** (high-school student): Cloud formation on Titan.

Funded Proposals

PI on NASA Planetary Data Archiving, Restoration and Tools (PDART) Program, 2024-2027
Expanding Titan's Material Property Database: Mechanical Properties, 3 yrs, \$841,345

Co-I on UTSA Transdisciplinary Teams Program (T2) seed grant, 2024-2025
Enabling studies of Titan's atmosphere with in-situ laser absorption spectroscopy, 1 yr, \$5,000 to Co-I Yu

Co-I on NASA Solar System Workings (SSW) Proposal, 2024-2027
The Fate of Hydrolyzed and Non-Hydrolyzed Sediments on Titan, 3 yrs, \$142,011 to Co-I Yu

PI, Heising-Simons Foundation, 2023-2025
Experiment-Driven Modeling of Haze Formation on Cool Exoplanets, 2 yrs, \$87,000

PI on NASA Habitable Worlds (HW) Program, 2023-2026
How to Identify Exoplanet Surfaces Using Atmospheric Trace Species in Super-Earth Atmospheres, 3 yrs, \$449,329

PI, Heising-Simons Foundation, 2023
The Texas Area Planetary Science (TAPS) Conference, \$86,317

PI on NASA Planetary Science Early Career Award (ECA), 2023-2028
The Next-Generation Laboratory Experiments on Planetary Materials, 5 yrs, \$199,972

PI on NASA Cassini Data Analysis Program (CDAP), 2022-2026
Comparing the Material Properties of Titan Aerosols and Laboratory-Made Aerosol Analogs, 3 yrs, \$647,607

Co-I on NASA Cassini Data Analysis Program (CDAP) Proposal, 2021-2025
Understanding Surface Material on Titan, 3 yrs, \$131,646 to Co-I Yu

Databases

- **A material property database for Titan-relevant organic liquids, ices, and solids:** titanmaterials.sites.ucsc.edu
- **A hazy exoplanet property database:** exoplanethaziness.shinyapps.io/hazyweb

Publications

*: Mentored Undergraduate Student, Δ : Mentored Graduate Student, †: Corresponding Author

Under Review.....

[22]: [△]Cindy N. Luu, [†]**Xinting Yu**, Christopher R. Glein, Hamish Innes, Artyom Aguichine, Joshua Krissansen-Totton, Julianne Moses, Shang-Min Tsai, Xi Zhang, Ngoc Truong, Jonathan J. Fortney, "Volatile-rich Sub-Neptunes as Hydrothermal Worlds: The Case of K2-18 b", *under review*.

Refereed Publications.....

22 Total: 12 First Author, 14 Corresponding Author, 15 First & Second Author

[22]: [△]Ziyu Huang, [†]**Xinting Yu**, Shang-Min Tsai, Julianne Moses, Kazumasa Ohno, Joshua Krissansen-Totton, Xi Zhang, Jonathan Fortney, "Probing Cold-to-Temperate Exoplanetary Atmospheres: The Role of Water Condensation on Surface Identification with JWST", *ApJ*, *in press*.

[21]: [†]**Xinting Yu**, *Yue Yu, *Julia Garver, Xi Zhang, Patricia McGuiggan, "The Fate of Simple Organics on Titan's Surface: A Theoretical Perspective", *Geophysical Research Letters*, **51**, e2023GL106156, <https://doi.org/10.1029/2023GL106156>, 2024. (*AGU press release, CNN article*).

[20]: [†]**Xinting Yu**, *Yue Yu, *Julia Garver, *Jialin Li, *Abigale Hawthorn, Ella Sciamma-O'Brien, Xi Zhang, and Erika Barth, "Material Properties of Organic Liquids, Ices, and Hazes on Titan", *The Astrophysical Journal Supplement Series*, **266**, 30, <https://doi.org/10.3847/1538-4365/acc6cf>, 2023.

[19]: Shannon MacKenzie, Kirby Runyon, **Xinting Yu**, Jasper Kok, Claire Newman, Ralph Lorenz, and Francesco Comola, "Sediment-Moving Winds and Abrasion on Titan: Implications for Yardangs", *Icarus*, **394**, 115433, <https://doi.org/10.1016/j.icarus.2023.115433>, 2023.

[18]: *Austin H. Dymont, [†]**Xinting Yu**, Kazumasa Ohno, Xi Zhang, Jonathan Fortney, Daniel Thorngren, and *Connor Dickinson, "Cleaning our Hazy Lenses: Statistical Trends in Transmission Spectra of Warm Exoplanets," *The Astrophysical Journal*, **937**, 2, <https://doi.org/10.3847/1538-4357/ac7f40>, 2022.

[17]: James Mang, Peter Gao, Callie E. Hood, Jonathan J. Fortney, Natasha Batalha, **Xinting Yu**, and Imke de Pater, "Microphysics of Water Clouds in the Atmospheres of Y Dwarfs and Temperate Giant Planets," *The Astrophysical Journal*, **927**, 184, <https://doi.org/10.3847/1538-4357/ac51d3>, 2022.

[16]: Francesco Comola, Jasper F. Kok, Juan M. Lora, K. Cohanin, **Xinting Yu**, Chao He, Patricia McGuiggan, Sarah M. Hörst, and Francis Turney, "Titan's prevailing circulation might drive highly intermittent, yet significant sediment transport", *Geophysical Research Letters*, **49**, 7, e2022GL097913, <https://doi.org/10.1029/2022GL097913>, 2022.

[15]: *Jialin Li, [†]**Xinting Yu**, Ella Sciamma-O'Brien, Chao He, Joshua Sebree, Farid Salama, Sarah M. Hörst, and Xi Zhang, "A Cross-Laboratory Comparison Study of Titan's Haze Analogs: Surface Energy", *The Planetary Science Journal*, **3**, 2, <https://doi.org/10.3847/PSJ/ac3d27>, 2022.

[14]: [†]**Xinting Yu**, Julianne I. Moses, Jonathan J. Fortney, and Xi Zhang, "How to Identify Exoplanet Surfaces Using Atmospheric Trace Species in Hydrogen-dominated Atmospheres", *The Astrophysical Journal*, **914**, 36, <https://doi.org/10.3847/1538-4357/abfdc7>, 2021. (**Article on Forbes**).

[13]: [†]**Xinting Yu**, Chao He, Xi Zhang, Sarah M. Hörst, *Austin H. Dymont, Patricia McGuiggan, Julianne I. Moses, Nikole K. Lewis, Jonathan J. Fortney, Peter Gao, Eliza M.-R. Kempton, Sarah Moran, Caroline V. Morley, Diana Powell, Jeff A. Valenti, and Véronique Vuitton, "Haze Evolution in Temperate Exoplanet Atmospheres Through Surface Energies Measurements", *Nature Astronomy*,

5(8), 822-831, <https://doi.org/10.1038/s41550-021-01375-3>, 2021.

[12]: †**Xinting Yu**, Sarah M. Hörst, Chao He, Patricia McGuiggan, Kai Kristiansen, and Xi Zhang, "Surface Energy of the Titan Aerosol Analog 'Tholin'", *The Astrophysical Journal*, **905**(2), 88, <https://doi.org/10.3847/1538-4357/abc55d>, 2020.

[11]: Ellen Czaplinski, **Xinting Yu**, Katherine Dzurilla, Vincent Chevrier, "Experimental Investigation of the Acetylene-Benzene Co-crystal on Titan", *The Planetary Science Journal*, **1**(3), 76, <https://doi.org/10.3847/PSJ/abbf57>, 2020.

[10]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Patricia McGuiggan, Mark S. Marley, Eliza M.-R. Kempton, Caroline V. Morley, and Véronique Vuitton, "Haze Formation in Warm H₂-rich Exoplanet Atmospheres", *The Planetary Science Journal*, **1**(2), 51, <https://doi.org/10.3847/PSJ/abb1a4>, 2020.

[9]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Patricia McGuiggan, Mark S. Marley, Eliza M.-R. Kempton, Sarah E. Moran, Caroline V. Morley, and Véronique Vuitton, "Sulfur Promotes Haze Formation in Warm Exoplanet Atmospheres", *Nature Astronomy*, **4**(10), 986-993, <https://doi.org/10.1038/s41550-020-1072-9>, 2020.

[8]: †**Xinting Yu**, Sarah M. Hörst, Chao He, and Patricia McGuiggan, "Single Particle Triboelectrification of Titan Sand Analogs", *Earth and Planetary Science Letters*, **530**, 115996, <https://doi.org/10.1016/j.epsl.2019.115996>, 2020.

[7]: †**Xinting Yu**, Sarah M. Hörst, Chao He, Bryan Crawford, and Patricia McGuiggan, "Where does Titan Sand Come From: Insight from Mechanical Properties of Titan Organic Analogs", *Journal of Geophysical Research - Planets*, **123**, 2310, <https://doi.org/10.1029/2018JE005651>, 2018. (Featured article in *JGR-planets* and article on *Universe Today*).

[6]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Eliza M.-R. Kempton, Mark S. Marley, Patricia McGuiggan, Caroline V. Morley, Jeff A. Valenti, and Véronique Vuitton, "Photochemical Haze Formation in the Atmospheres of Super-Earths and Mini-Neptunes", *The Astronomical Journal*, **156**, 1, <https://doi.org/10.3847/1538-3881/aac883>, 2018.

[5]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Eliza M.-R. Kempton, Patricia McGuiggan, Caroline V. Morley, Jeff A. Valenti, and Véronique Vuitton, "Laboratory Simulations on Haze Formation in Cool Exoplanet Atmospheres: Particle Color and Size Distribution", *The Astrophysical Journal Letters*, **865**(1), L3, <https://doi.org/10.3847/2041-8213/aab42b>, 2018.

[4]: †**Xinting Yu**, Sarah M. Hörst, Chao He, Patricia McGuiggan, and Nathan T. Bridges, "Direct Measurement of Interparticle Forces of Titan Aerosol Analogs ('Tholin') Using Atomic Force Microscopy", *Journal of Geophysical Research - Planets*, **122**(12), 2610, doi:10.1002/2017JE005437, 2017.

[3]: †**Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, Devon M. Burr, Joshua A. Sebree, and James K. Smith, "The Effect of Adsorbed Liquid and Material Density on Saltation Threshold: Insight from Laboratory and Wind Tunnel Experiments", *Icarus*, **297**, 97, doi:10.1016/j.icarus.2017.06.034, 2017.

[2]: †**Xin-Ting Yu**, Jun Zhang, Ting Li, and Shu-Hong Yang, "Case Studies of EUV Cyclones and Their Associated Magnetic Fields", *Research in Astronomy and Astrophysics*, **15**, 1525, doi.org/10.1088/1674-

4527/15/9/009, 2015.

[1]: †Xinting Yu, Jun Zhang, Ting Li, Yuzong Zhang, and Shuhong Yang, "Homologous Cyclones in the Quiet Sun", *The Astrophysical Journal Letters*, **782**(2), L15, doi.org/10.1088/2041-8205/782/2/L15, 2014.

Selected Conference Proceedings

*: Mentored Undergraduate Student, Δ : Mentored Graduate Student

[30]: Yu X., The Next-Generation Laboratory Experiments in Planetary Materials, *DPS*, 2024, *Invited Plenary Talk*.

[29]: Yu X., et al., The Fate of Organics on Titan's Surface, *AbSciCon*, 2024.

[28]: Δ Luu C., Yu X., et al., Geochemistry of a Potential Supercritical Ocean on K2-18b, *AbSciCon*, 2024.

[27]: Yu X., The Next-Generation Laboratory Experiments in Planetary Materials, *LPSC*, 2024, *Invited Plenary Talk*.

[26]: *Austin E., Yu X., et al., A Cross-Laboratory Comparison Study of Titan Haze Analogs: Surface Energy, *LPSC*, 2024.

[25]: Δ Husić A., Yu X., et al., Characterization of Tholins Produced by a New Experimental Set Up, *LPSC*, 2024.

[24]: *Austin E., Yu X., et al., A Cross-Laboratory Comparison Study of Titan Haze Analogs: Surface Energy, *DPS-EPSC*, 2023.

[23]: Yu X., et al., The Fate of Simple Organics on Titan's Surface: Implication for Magic Islands on Titan's Surface, *AGU*, 2023.

[22]: Yu X., et al., The Fate of Simple Organics on Titan's Surface: Implication for Magic Islands on Titan's Surface, *DPS-EPSC*, 2023.

[21]: Δ Huang Z., Yu X., et al. Identifying Surfaces of Temperate to Cool Exoplanets in Hydrogen-Dominated Atmospheres in the JWST Era, *Exoclimes IV*, 2023.

[20]: Yu X., A New Planetary Material Characterization Facility (PMCHEF) for Physical Properties Analysis of Planetary/Exoplanetary Materials, *Exoclimes IV*, 2023.

[19]: Yu X., A Cross-Laboratory Comparison Study of Titan Haze Analogs, *242nd AAS Summer Meeting - Laboratory Astrophysics Division*, 2023.

[18]: Yu X., A Material Property Database of Organic Liquids, Ices, and Hazes on Titan, *242nd AAS Summer Meeting - Laboratory Astrophysics Division*, 2023.

[17]: Yu X., The Fate of Simple Organics on Titan's Surface, *LPSC*, 2023.

[16]: Yu X., A Material Property Database of Organic Liquids, Ices, and Hazes on Titan and a Cross-Laboratory Comparison Study of Titan Haze Analogs, *LPSC*, 2023.

[15]: Yu X., A Cross-Laboratory Comparison Study of Titan Haze Analogs and A Database of Material Properties of Organic Liquids, Ices, and Hazes on Titan, *DPS*, 2022.

[14]: Yu X., Identify exoplanet surfaces using atmospheric characterization: a planet parameter space survey, *Bay Area Exoplanet Meeting*, 2022.

[13]: Yu X., The Next-Generation Laboratory Experiments on Planetary Materials, *Bay Area Planetary Science Meeting*, 2022, **Invited**.

[12]: *Dymont A.H., Yu X., Ohno K., Zhang X., and Fortney J. J., Cleaning our Hazy Lenses: Statistical Trends in Transmission Spectra of Warm Exoplanets, *Exoplanet IV*, 2022.

[11]: Yu X., He C., Thompson M., *Dymont A.H., Ohno K., Zhang X., Hörst S.M., McGuiggan P., Moses J.I., Lewis N.K., Fortney J.J., Gao P., Kempton E. M.-R., Moran S., Morley C.V., Powell D., Valenti J.A., and Vuitton V., Haze Evolution in Temperate Exoplanet Atmospheres: the Laboratory Perspective, *Exoplanet IV*, 2022.

[10]: Yu X., *Yu Y., *Garver J., *Li J., Zhang X., A Database for the Material Properties of Titan's Organic Liquids, Ices, and Hazes, *LPSC*, 2022.

[9]: Yu X., Thompson M., *Duncan T., *Kim K., Telus M., Joshi, T., and Lederman D., Carbonaceous Chondrite Outgassing Experiments: Implications for Methane Replenishment on Titan, *LPSC*, 2022.

[8]: Yu X., J. Moses, J. Fortney, and Zhang X., How to identify exoplanet surfaces: without seeing them?, *AGU fall meeting*, 2021.

[7]: Yu X., Laboratory Experiments on Understanding Atmospheric, Surface, and Interior Processes on Titan, *Titan Through Time V*, 2021, **Invited**.

[6]: *Li J., Yu X., Sciamma-O'Brien E., He C., Sebree J.A., Salama F., Hörst S.M., & Zhang X., Comparison Study of Surface Energies for Titan Haze Analogs "Tholins", *Titan Through Time V*, 2021.

[5]: *Duncan T., Yu X., *Kim K., Thompson M., Telus M., Joshi, T., and Lederman D., Outgassing Experiments on Carbonaceous Chondrites and Their Implications for Titan's Secondary Atmosphere, *LPSC*, 2021.

[4]: *Garver, J., *Yu Y., Yu X., and Zhang X., Cloud formation on Titan, *237th AAS meeting*, 2021.

[3]: *Li J., Yu X., Sciamma-O'Brien E., He C., Sebree J.A., Salama F., Hörst S.M., & Zhang X., Measurement and Implications of Surface Energies of Titan's Haze Analogs "Tholins", *AGU Falling Meeting*, 2020.

[2]: Yu X., Hörst S.M., He C., McGuiggan P., and Zhang X., Integrating Materials Science Techniques into the Study of Planetary Hazes, *AGU Falling Meeting*, 2019, **Invited**.

[1]: Yu X., Hörst S.M., He C., Crawford B., and McGuiggan P., Where Does Titan Sand Come From: Insight from Mechanical Properties of Titan Organic Analogs, *LPSC*, 1786, 2018, **Stephen E. Dwornik Award–Best Graduate Oral Presentation**.

Skills

Language: Chinese (native), English (fluent), Japanese and Spanish (conversational)

Programming: Python, Matlab, IDL, C++, Fortran, Mathematica

Computer: Windows, Linux, Mac OS, MS Office, LaTeX

Laboratory Instruments: RGA-MS, SEM/EDS, AFM, XRD, XRR, Nanoindenter, Pycnometer, TGA/DSC

Laboratory Skills: Material Characterization with Environmental Control, Vacuum Techniques, Photochemistry Synthesis, Low/High Temperature and Low-Pressure Gas Reactions

Scholarships and Travel Grants

- UTSA Faculty Travel Support Program, 2022, 2023
- 50th DPS Hartmann Travel Grant, 2018
- Titan Surface Meeting travel grant, 2018
- Johns Hopkins University J. Brien Key Fund, 2017
- Women in Astronomy IV travel grant, 2017
- USTC Outstanding Student Scholarship (Grade 1), 2013
- USTC Outstanding Student Scholarship (Grade 2), 2012
- USTC Outstanding Student Scholarship (Grade 3), 2011

Additional Training

- NCFDD Faculty Success Program *Summer 2023*
- Alan Alda Center for Science Communications Workshop *Summer 2023*
- 51 Pegasi b Fellows Mentoring Workshop *Spring 2022*
- EON-ELSI Winter School in Earth–Life Science *Winter 2018*
- JHU Teaching Academy–Teaching Institute Certificate Program *Summer 2016*

Outreach and Service

- Girl’s Empowerment Summit Mentor Luncheon Mentor *Spring 2024*
- Astronomy on Tap (AoT) SATX speaker *Spring 2024*
- Professional Advancement Workshop Series (PAWS) panelist *Fall 2023*
- KLRN STEM & Energy Career Day *Spring 2023*
- UCSC EPS diversity committee member *2021-2023*
- UCSC Institute for Geophysics and Planetary Physics seminar series co-organizer *2020-2023*
- UCSC Planetary Lunch seminar series co-organizer *2021-2023*
- Outreach talk at BASIS Independent Silicon Valley *Spring 2022*
- UCSC MINT Program mentor *Fall 2021*
- UCSC Science Internship Program, mentor of three high school students *Summer 2021*
- UCSC 2nd Annual Undergrad-Grad STEM Mixer *Jan 2020*
- 52th, 50th, 49th LPSC microblogger *Spring 2021, 2019, 2018*
- 15th Annual Physics Fair organizer, Johns Hopkins University *Spring 2018*

Professional Affiliations

- Division for Planetary Sciences of the American Astronomical Society
- American Geophysical Union
- American Astronomical Society

Professional Activities

- Network for Ocean Worlds Steering Committee, 2020–current
- External reviewer for NASA Solar System Workings, Habitable Worlds, Cassini Data Analysis, Exoplanets Research programs
- Review panel member for NASA FINESST program, NSF Astronomy & Astrophysics program, NASA PSD ISFM Midway Review
- Reviewer for Icarus, ApJ, ApJL, A&A, GRL, PSS, PSJ, ACS Earth and Space Chemistry, Nature Communications, Science Advances
- LPSC Dwornik best student presentation award judge
- AGU OSPA best student presentation award judge

Leadership and Service

- Scientific organizing committee for the DPS meeting, 2024
- 2nd Texas Area Planetary Science (TAPS) Meeting Series, Organizer, SOC and LOC chair, 2024
- Scientific organizing committee for the DPS-EPSC meeting, 2023
- Inaugural Texas Area Planetary Science (TAPS) Meeting Series, Organizer, SOC and LOC chair, 2023
- Scientific organizing committee for the cloud-zwei-conference, 2023
- Scientific organizing committee for the cloud-nine-conference, 2021
- Scientific organizing committee for the Bay Area Planetary Science Meeting, 2022

University of Texas at San Antonio

- Department of Physics and Astronomy Admissions Committee
- Department of Physics and Astronomy Qualifying Exam Member at UTSA: Sean Dillon (Fall 2023), Erica Dykes (Fall 2023), Jared Schroeder (Fall 2023)
- Department of Physics and Astronomy Masters Supervisory Committee at UTSA: Elena Dolgas (Summer 2023)
- Department of Earth and Planetary Sciences Masters Supervisory Committee at UTSA: Ashley Emerson (Summer 2023)

Volunteer Experiences

- ACE certified personal trainer, 2019–2021
- Animal Interpretation and Animal Handling Volunteer in the Maryland Zoo in Baltimore, 2017–2019
- Yelp Elite Member, 2017–present
- Education Volunteer in the Maryland Zoo in Baltimore, 2016–2019
- Volunteer Translator (adding English subtitles and translate English to Chinese) for Educational Videos, Youzimu Subtitle Team, 2016–2017
- Completed Full Marathon in 2016 Chicago, 2015 Honolulu, 2015 Philadelphia, 2015 Marine Corps, 2014 Baltimore, 2014 Honolulu, 2014 Xiamen, 2013 Beijing, 2013 Shanghai

○ Completing Half Marathon in 2012 Beijing, 2012 Yangzhou, 2013 Yangzhou, 2014 Kangbao, 2015 Xiamen, 2017 New York