# Xinting Yu

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## Current Position

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

## Education

**Johns Hopkins University** **Baltimore, MD, USA**
*PhD in Planetary Science* *2014–2019*

**University of Science and Technology of China** **Hefei, Anhui, China**
*BS in Space Physics with honors* *2010–2014*

## Research Experience

**University of California Santa Cruz** **Santa Cruz, CA**
*51 Pegasi b Postdoctoral Fellow* (*Supervisor: Xi Zhang, Jonathan Fortney*) *2019–2022*
Laboratory characterization of planetary materials, modeling cloud-haze interactions and cloud formation on Titan and exoplanets, photochemical modeling in sub-Neptune atmospheres

**Johns Hopkins University** **Baltimore, MD**
*Graduate Research Assistant* (*Advisor: Sarah Hörst*) *2014–2019*
Laboratory production and characterization of Titan aerosol analogs ("tholins") and the effect on sediment transport and dune formation on Titan

**NASA Ames Research Center** **Mountain View, CA**
*Visiting Student* (*Collaborators: Nathan Bridges, Devon Burr, James Smith*) *2015 & 2016 Summer*
Sediment transport on Titan using the Titan Wind Tunnel

**Key Laboratory of Solar Activity, National Astronomical Observatories** **Beijing, China**
*Undergraduate Research Assistant* (*Advisor: Jun Zhang*) *2013–2014*
Investigation of cyclones in the quiet Sun using SDO/AIA and HMI data

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

## Teaching and Mentoring Experience

**Instructor**

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

**Guest Lecturer**

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

**Teaching Assistant**

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

**Teaching Grants**

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

**Mentored Students**

University of Texas at San Antonio (current group members, 2023–present) — San Antonio, TX

- **Adis Husic** (*1st year PhD Student, Physics*): Aging of Titan haze analogs - implications for the dark materials on Titan.
- **Cindy Luu** (*1st year PhD Student, Physics*): Identify surfaces on temperate to hot exoplanets.
- **Allen (Boshu) Qiao** (*Senior, Physics*): Expanding and archiving the Titan material database with the NASA Planetary Data System (PDS).
- **Eric Austin** (*Senior, Physics*): Comparison study on the surface energies of Titan haze analogs.
- **Mary Kelly** (*Sophomore, Physics*): Archiving the optical constants of gas tholins.
- **Emran Ismail** (*Senior, Physics*): Trends in exoplanet haziness with JWST.
- **Charles Cordts** (*Senior, Physics*): Flocculation of organic sediments in methane rivers on Titan.

- **Beauxregard Martinez** (*Senior, Environmental Science*): Flocculation of organic sediments in methane rivers on Titan.
- **Phillip Doubleday** (*Sophomore, Physics*): 3D printing of asteroid shape models.

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 Boston University.
- **Erik White** (*UCSC undergrad '23, BS EPS*): Comparison study on the surface energies of Titan haze analogs & Flocculation experiments on Titan.
- **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 a 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** (*3rd year, astrophysics*): Interactive website for trends in exoplanet haziness.
- **Abigale Hawthorn** (*2nd year, 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 haziness of cool exoplanets, **Link**.
- **Francesca Tom** (high-school student): Cloud formation on Titan.

## Funded Proposals

**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*

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

**NASA Planetary Science Early Career Award (ECA), *2023-2028***
*The Next-Generation Laboratory Experiments on Planetary Materials, 5 yrs, $200,000*

**PI on NASA Cassini Data Analysis Program (CDAP), *2022-2025***
*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, *2021-2024***
*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, $^{\triangle}$: Mentored Graduate Student, †: Corresponding Author

### With Coauthors

$^{\triangle}$Ziyu Huang, †**Xinting Yu**, Shang-Min Tsai, Julianne Moses, Kazumasa Ohno, Joshua Krissansen-Totton, Xi Zhang, *Jialin Li, Jonathan Fortney, "Identifying Surfaces of Cool Exoplanets with Condensation in JWST Era", *in prep*.

### Under Review

### Refereed Publications

**21 Total: 11 First Author, 13 Corresponding Author, 14 First & Second Author**

**[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", *ApJS*, **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," *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," *Astrophysical Journal*, **927**, 184, https://doi.org/10.3847/1538-4357/ac51d3, 2022.

[**16**]: Francesco Comola, Jasper F. Kok, Juan M. Lora, K. Cohanim, **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", *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", *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'", *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", *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", *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", *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", *Res. Astron. and Astrophys.*, **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", *Astrophysical Journal Letters*, **782**(2), L15, doi.org/10.1088/2041-8205/782/2/L15, 2014.

## Selected Conference Proceedings

*Mentored Undergraduate Student

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

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

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

**[47]**: **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.

**[46]**: **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.

**[45]**: **Yu X.**, Clouds and Hazes in Exoplanet Atmospheres in the JWST era, *Center for Computational Astrophysics Exoplanet Atmospheres Symposium*, 2022, ***Invited***.

**[44]**: **Yu X.**, The Next-Generation Laboratory Experiments on Planetary Materials, *XXXIst General Assembly of international Astronomical Union (IAUGA)*, 2022, ***Invited***.

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

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

[**41**]: **Yu X.**, Chemical disequilibrium and atmospheric evolution of Neptune-worlds, *Royal Astronomical Society Specialist Discussion Meeting: Exoplanet Modelling in the JWST Era II*, 2022.

[**40**]: *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.

[**39**]: *Li J., **Yu X.**, Moses J.I., Fortney J. J., Zhang X., and Tsai S.M., Investigating Chemical Disequilibrium of Surface-Sensitive Trace Species in Hydrogen-Dominated Atmospheres, *Exoplanet IV*, 2022

[**38**]: **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.

[**37**]: **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.

[**36**]: **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.

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

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

[**33**]: *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.

[**32**]: *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", *LPSC*, 2021.

[**31**]: *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.

[**30**]: **Yu X.**, *Yu Y., *Garver, J., and Zhang X., Cloud-Haze and Cloud-Lake Interactions on Titan, *LPSC*, 2021.

[**29**]: *Dymont A., **Yu X.**, and Zhang X., Cleaning Our Hazy and Cloudy Lens on sub-Neptune Exoplanets, *237th AAS meeting*, 2021.

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

[**27**]: **Yu X.**, J. Moses, J. Fortney, and Zhang X., Atmospheric Trace Species Abundances as Proxies for Identifying Exoplanet Surfaces, *237th AAS meeting*, 2021.

[**26**]: *Dymont A., **Yu X.**, and Zhang X., Cleaning Our Hazy and Cloudy Lens on sub-Neptune Exoplanets, *AGU Falling Meeting*, 2020.

[**25**]: *Yu Y., *Garver, J., **Yu X.**, and Zhang X., Aerosol-Organic Condensates-Lake Interactions on Titan, *AGU Falling Meeting*, 2020.

**[24]**: *Duncan T., **Yu X.**, Thompson M., and Kim K., Outgassing experiments on carbonaceous chondrites to understand the formation of Titan's atmosphere, *AGU Falling Meeting*, 2020.

**[23]**: *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.

**[22]**: **Yu X.**, Zhang X., Hörst S.M., He C., and McGuiggan P., The surface energies and lifetimes of cool exoplanet haze analogs: insight from laboratory experiments, *AGU Falling Meeting*, 2020.

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

**[20]**: *Garver, J., *Yu Y., **Yu X.**, and Zhang X., Cloud formation on Titan, *DPS*, 411.01, 2020.

**[19]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., Zhang X., Surface energy of the Titan aerosol analog 'tholin': implications on cloud formation and aerosol-lake interactions, *DPS*, 411.05, 2020.

**[18]**: *Yu Y., *Garver, J., **Yu X.**, and Zhang X., Aerosol-Organic Condensates-Lake Interactions on Titan, *Bay Area Planetary Science Meeting*, 2020.

**[17]**: *Li J., **Yu X.**, Zhang X., Hörst S.M., He C., Sciamma-O'Brien E., Sebree J.A., Measurement and Implications of Surface Energies of Titan's Haze Analogs "Tholins", *Bay Area Planetary Science Meeting*, 2020.

**[16]**: **Yu X.**, Zhang X., Hörst S.M., He C., McGuiggan P., The surface energy and life cycle of cool exoplanet haze analogs, *Exoplanet III*, 2020.

**[15]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Zhang X., Material Properties of Tholin: Implications for Aeolian Processes on Titan, *6th International Dune Workshop*, 3016, 2020.

**[14]**: **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***.

**[13]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Zhang X., The Surface Energy of "Tholin" and its Implication on Haze-Liquids Interactions on Titan, *AGU Falling Meeting*, 2019.

**[12]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Zhang X., Characterization of Cloud-Haze Interactions in Cool Exoplanets Atmospheres, *Bay Area Exoplanet Meeting*, 2019.

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

**[10]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Zhang X., Material properties of Titan Aerosol Analogs "Tholin", *EPSC-DPS*, 398-2, 2019.

**[9]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Zhang X., Characterization of Cloud-Haze Interactions in Cool Exoplanets Atmospheres, *EPSC-DPS*, 775-1, 2019.

**[8]**: **Yu X.**, Hörst S.M., He C., and McGuiggan P., Direct Measurement of Single Particle Electrostatic Forces Between Titan Sand Analogs Using Atomic Force Microscopy, *LPSC*, 2042, 2019.

**[7]**: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Crawford B., Interpreting Sand Formation on Titan: Insight from Interparticle Forces and Mechanical Properties of Titan Organic Analogs, *DPS*, 203.07D, 2018.

[6]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Crawford B., Where Does Titan Sand Come From: Insight from Interparticle Forces and Mechanical Properties of Titan Organic Analogs, *Titan Surface Meeting*, 2018.

[5]: **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.**

[4]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Bridges N.T., Direct Measurements of Surface Energy, Elastic Modulus and Interparticle Forces of Titan Aerosol Analog ("Tholin") Using Atomic Force Microscopy, *AGU fall meeting*, 221907, 2017.

[3]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Bridges N.T., Direct Measurement of Interparticle Adhesion of Titan Aerosol Analogs ("Tholin") Using Atomic Force Microscopy, *5th International Dune Workshop*, 3048, 2017.

[2]: **Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, Devon M. Burr, and Joshua A. Sebree, Quantifying Water Content and Equilibration Properties of Wind Tunnel Materials, *DPS-EPSC*, 425.03, 2016.

[1]: **Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, and Devon M. Burr, Quantifying Density, Water Adsorption and Equilibration Timescale of Wind Tunnel Materials, *LPSC*, 2683, 2016.

## 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

- 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

- 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
- Reviewer for Icarus, ApJ, A&A, ApJL, GRL, PSS, PSJ, Nature Communications, Science Advances
- LPSC Dwornik best student presentation award judge
- AGU OSPA best student presentation award judge

## Leadership and Service

- 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