IAN WONG

PLANETARY SCIENCE RESEARCHER

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EDUCATION

PhD — **Caltech** — 2013–2018
Planetary Science
Thesis: "Probing the Trojan-Hilda-KBO Connection: An Empirical Test of Dynamical Instability Models of Solar System Evolution"
Adviser: Michael E. Brown

B.A. — **Princeton University** — 2008–2012
Independent concentration in Linguistics
Graduated *magna cum laude* (GPA: 3.98/4.00)

RESEARCH POSITIONS

Senior Staff Scientist — April 2026–present
Staff Scientist — April 2024–March 2026
Space Telescope Science Institute

Research Assistant Professor — August 2023–April 2024
Department of Physics, American University

Postdoctoral Researcher — August 2023–April 2024
NASA Goddard Space Flight Center

NASA Postdoctoral Program Fellow — August 2021–July 2023
NASA Goddard Space Flight Center

***51 Pegasi b* Postdoctoral Fellow** — June 2018–July 2021
Department of Earth, Atmospheric and Planetary Sciences, MIT

Graduate Research Assistant — June 2013–May 2018
Division of Geological and Planetary Sciences, Caltech

OTHER PROFESSIONAL ACTIVITIES

Member, JWST Solar System GTO team — 2021–present
Reviewer/panelist on various NSF, NOIRLab, NASA, HST, JWST proposal cycles — 2021–present
Affiliate member, NASA *Lucy* mission science team — 2018–present

Referee, AJ, PSJ, A&A, Icarus, MNRAS, Nature Astronomy 2016–present
Member, MAST Users Group 2023–2025
Outreach mentor, NASA *Lucy* mission Here 2 Observe program 2023–2024
Affiliate member, JWST Transiting Exoplanet Community Early Release Science Team 2022–2023
Research adviser
- Shiqi Chen: *Undergraduate Research Opportunities Program*, MIT 2020–2021
- Prajwal Niraula: *Graduate Generals Project*, MIT 2019–2021
- Aakash Mishra: *Research in Science & Engineering*, Boston University Summer 2018
- Angelica Zhou: *Summer Undergraduate Research Fellowship*, Caltech Summer 2017
- Yixiao Yan: *Summer Undergraduate Research Fellowship*, Caltech Summer 2015

Member of Scientific Organizing Committee, 52nd Annual DPS Conference 2020
Teaching assistant, Caltech 2014–2018
- Ge 103: Introduction to the Solar System
- Ge 108: Applications of Physics to the Earth Sciences

Work intern, Advanced Propulsion Laboratory, NASA Marshall Space Flight Center Fall 2012
Research intern
- *Undergraduate Student Research Program*, Princeton University Summer 2012
- *Program in Plasma Science and Technology*, PPPL Summers 2010 & 2011

FUNDING PROPOSALS

JWST Cycle 5 GO Program #11995 (PI) 2026–2028
$59,094 [0.11 FTE]
JWST Cycle 5 GO Program #11793 (co-I) 2026–2028
$83,203 [0.19 FTE]
JWST Cycle 5 GO Program #9609 (co-PI) 2026–2028
$31,200 [0.075 FTE]
JWST Cycle 4 GO Program #9078 (PI) 2025–2027
$81,086 [0.166 FTE]
JWST Cycle 3 GO Program #5940 (PI) 2024–2026
$48,725 [0.10 FTE]
JWST Cycle 2 DD Program #4621 (PI) 2024–2026
$53,194 [0.075 FTE]
JWST Cycle 2 GO Program #3399 (co-I) 2023–2024
$57,494 [0.32 FTE]
HST Cycle 25 GO-15249 (PI) 2018–2021
$108,107.80

PUBLICATIONS

Full references are provided in my NASA ADS Library.
h-index = 35

First- and second-author papers (38)

1. Wong I, Holler B J, Protopapa S, et al. "A JWST view of Triton: Complex surface ice chemistry, constraints on $^{13}C/^{12}C$ ratio, and atmospheric CO fluorescence". PSJ, in prep (2026).
2. Wong I, Protopapa S, Guilbert-Lepoutre A, et al. "JWST reveals anomalously enhanced methane outgassing from below Chiron's water ice and carbon dioxide bearing surface". Nature Communications, in review (2026).
3. Belyakov M, Wong I, Bolin B T, et al. "The volatile inventory of 3I/ATLAS as seen with JWST/MIRI". ApJL 1001 L11 (2026).

4. Wong I, Grundy W M, Emery J P, et al. “Evidence of possible spectral variability in the Patroclus–Menoetius binary system”. PSJ 6 295 (2025).
5. Wong I, Holler B J, Protopapa S, et al. “JWST/NIRSpec spectra of Salacia–Actaea and Máni: Exploring population-level trends among water-ice-rich Kuiper belt objects”. PSJ 6 281 (2025).
6. Wong I, Holler B J, Fraser W C, & Brown M E. “JWST spectroscopy of a blue binary cold classical Kuiper belt object”. PSJ 6 271 (2025).
7. Protopapa S, Wong I, Lellouch E, et al. “JWST detection of hydrocarbon ices and methane ice on Makemake”. ApJL 991 L34 (2025).
8. Lellouch E, Wong I, Lavvas P, et al. “Pluto’s atmosphere gas and haze composition from JWST/MIRI spectroscopy”. A&A 696 A147 (2025).
9. Brown M E, Wong I, & Belyakov M. “JWST near-infrared spectroscopy of high-albedo Jupiter Trojans: A new surface type in the Trojan belt”. PSJ 6 22 (2025).
10. Wong I, Brown M E, Emery J P, et al. “JWST near-infrared spectroscopy of the Lucy Jupiter Trojan flyby targets: Evidence for OH absorption, aliphatic organics, and CO_2”. PSJ 5 87 (2024).
11. Emery J P, Wong I, Stansberry J A, et al. “A tale of 3 dwarf planets: Compositions of Sedna, Gonggong, and Quaoar from JWST spectroscopy”. Icarus, 414 116017 (2024).
12. Grundy W M, Wong I, Glein C R, et al. “Measurement of D/H and $^{13}C/^{12}C$ ratios in methane ice on Eris and Makemake: Evidence for internal activity”. Icarus, 401 115923 (2024).
13. Wong I & Brown M E. “Photometric validation and characterization of the Ennomos collisional family in the Jupiter Trojans”. AJ 165 15 (2023).
14. Wong I, Chachan Y, Knutson H A, et al. “The Hubble PanCET program: A featureless transmission spectrum for WASP-29b and evidence of enhanced atmospheric metallicity on WASP-80b”. AJ 164 30 (2022).
15. Wong I, Shporer A, Vissapragada S, et al. “TESS revisits WASP-12: Updated orbital decay rate and constraints on atmospheric variability”. AJ 163 175 (2022).
16. Wong I, Shporer A, Zhou G, et al. “TOI-2109: An ultrahot gas giant on a 16 hr orbit”. AJ 162 256 (2021).
17. Wong I, Kitzmann D, Shporer A, et al. “Visible-light phase curves from the second year of the TESS primary mission”. AJ 162 127 (2021).
18. Beatty T G, Wong I, Fetherolf T, et al. “The TESS phase curve of KELT-1b suggests a high dayside albedo”. AJ 160 211 (2020).
19. Wong I, Shporer A, Daylan T, et al. “Systematic phase curve study of known transiting exoplanet systems from Year 1 of the TESS Mission”. AJ 160 155 (2020).
20. Wong I, Shporer A, Kitzmann D, et al. “Exploring the atmospheric dynamics of the extreme ultra-hot Jupiter KELT-9b using TESS photometry”. AJ 160 88 (2020).
21. Wong I, Benneke B, Gao P, et al. “Optical to near-infrared transmission spectrum of the warm sub-Saturn HAT-P-12b”. ApJ 159 234 (2020).
22. Wong I, Benneke B, Shporer A, et al. “*TESS* phase curve of the ultra-hot Jupiter WASP-19b”. AJ 159 104 (2020).
23. Wong I, Shporer A, Becker J C, et al. “The full *Kepler* phase curve of the eclipsing hot white dwarf binary system KOI-964” ApJ 159 29 (2020).
24. Benneke B, Wong I, Piaulet C, et al. “Water vapor and clouds on the habitable-zone sub-Neptune exoplanet K2-18b”. ApJL 887 L14 (2019).
25. Wong I, Mishra A, & Brown M E “Photometry of active Centaurs: Colors of dormant active Centaur nuclei” AJ 157 225 (2019).
26. Wong I & Brown M E. “Multiband observations of a Patroclus-Menoetius mutual event: Constraints on surface inhomogeneity”. AJ 157 203 (2019).
27. Shporer A, Wong I, Huang C X, et al. “*TESS* full orbital phase curve of the WASP-18b system” AJ 157 178 (2019).
28. Wong I, Brown M E, Blacksberg J, Ehlmann B L, & Mahjoub A. “*Hubble* ultraviolet spectroscopy of Jupiter Trojans”. AJ 157 161 (2019).

29. Wong I, Brown M E, & Emery J P. “0.7-2.5 μm spectra of Hilda asteroids”. AJ 154 104 (2017).
30. Wong I & Brown M E. “The bimodal color distribution of small Kuiper Belt objects”. AJ 153 145 (2017).
31. Wong I & Brown M E. “The color-magnitude distribution of Hilda asteroids: Comparison with Jupiter Trojans”. AJ 153 69 (2017).
32. Wong I & Brown M E. “A hypothesis for the color bimodality of Jupiter Trojans”. AJ 152 90 (2016).
33. Wong I, Knutson H A, Kataria T, et al. “3.6 and 4.5 μm *Spitzer* phase curves of the highly irradiated hot Jupiters WASP-19b and HAT-P-7b”. ApJ 823 122 (2016).
34. Wong I & Brown M E. “The color-magnitude distribution of small Jupiter Trojans”. AJ 150 174 (2015).
35. Wong I, Knutson H A, Lewis, N K, et al. “3.6 and 4.5 μm phase curves of the highly irradiated eccentric hot Jupiter WASP-14b”. ApJ 811 122 (2015).
36. Wong I, Brown M E, & Emery J P. "The differing magnitude distributions of the two Jupiter Trojan color populations". AJ 148 112 (2014).
37. Wong I, Knutson H A, Cowan N B, et al. “Constraints on the atmospheric circulation and variability of the eccentric hot Jupiter XO-3b”. ApJ 794 134 (2014).
38. Wong I, Grigoriu A, Roslund J, Ho T S, & Rabitz H. "Laser-driven direct quantum control of nuclear excitations". Phys. Rev. A 84 053429 (2011).

Other co-author papers (41)

1. de Kleer K, Ehlmann B L, Jacobsen S A, et al. “The surface mineralogy of the spinel-rich asteroids from mid-infrared spectroscopy with JWST”. PSJ 7 36 (2026).
2. Chachan Y, Lothringer J, Inglis J, et al. “Strong NUV refractory absorption and dissociated water in the Hubble transmission spectrum of the ultra hot Jupiter KELT-20 b”. AJ 170 234 (2025).
3. Bertrand T, Lellouch E, Holler B J et al. “Evidence of haze control of Pluto's atmospheric heat balance from JWST/MIRI thermal light curves”. Nature Astronomy 9 1300 (2025).
4. Bolin B T, Belyakov M, Fremling C, et al. “Interstellar comet 3I/ATLAS: discovery and physical description”. MNRAS 542 L139 (2025).
5. Arredeondo A, Becker T M, McAdam M M, et al. “JWST Spectroscopy of (142) Polana: Connection to NEAs (101955) Bennu and (162173) Ryugu”. PSJ 6 195 (2025).
6. Bolin B T, Fremling C, Belyakov M, et al. “Keck and Gemini characterization of Hayabusa2# rendezvous target 1998 KY_{26}”. AJ 169 303 (2025).
7. Thomas C A, Rivkin A S, Wong I, et al. “Multiwavelength JWST observations of (3200) Phaethon show a dehydrated object with an aqueously altered origin”. PSJ 6 115 (2025).
8. Licandro J, Pinilla-Alonso N, Holler B J, et al. “Thermal evolution of trans-Neptunian objects through observations of Centaurs with JWST”. Nature Astronomy 9 245 (2025).
9. Pinilla-Alonso N, Brunetto R, de Prá M N, et al. “A DiSCo-TNOs portrait of the primordial Solar System”. Nature Astronomy 9 230 (2025).
10. Rivkin A S, Thomas C A, Wong I, et al. “Observation and quantitative compositional analysis of Ceres, Pallas, and Hygiea using JWST/NIRSpec”. PSJ 6 9 (2025).
11. Protopapa S, Raut U, Wong I, et al. “Discovery of carbon dioxide and hydrogen peroxide on Charon’s stratified surface with JWST”. Nature Communications 15 8247 (2024).
12. Pinilla-Alonso N, Licandro J, Brunetto R, et al. “Unveiling the ice and gas nature of active centaur (2060) Chiron using the James Webb Space Telescope”. A&A Letters 692 L11 (2024).
13. Kiss C, Müller T G, Farkas-Takács A, et al. “Prominent mid-infrared excess on the dwarf planet (136472) Makemake discovered by JWST/MIRI indicates ongoing activity”. ApJL 976 L9 (2024).
14. Belyakov M, Davis M R, Milby Z, Wong I, & Brown M E. “JWST spectrophotometry of the small satellites of Uranus and Neptune”. PSJ 5 119 (2024).
15. Levison H F, Marchi S, Noll K S, et al. “A contact binary satellite of the asteroid (152830) Dinkinesh”. Nature 629 1015 (2024).

16. Glein C R, Grundy W M, Lunine J I, et al. “Moderate D/H ratios in methane ice on Eris and Makemake as evidence of hydrothermal or metamorphic processes in their interiors: Geochemical analysis”. Icarus 412 115999 (2024).
17. Rivkin A S, Thomas C A, Wong I, et al. “Near to mid-Infrared spectroscopy of (65803) Didymos as observed by JWST: Characterization observations supporting the Double Asteroid Redirection Test”. PSJ 4 214 (2023).
18. Coulombe J-P, Benneke B, Challener R, et al. “A broadband thermal emission spectrum of the ultra-hot Jupiter WASP-18b”. Nature 620 292 (2023).
19. Piaulet C, Benneke B, Almenara J M, et al. “Evidence for the volatile-rich composition of a 1.5-Earth-radius planet”. Nature Astronomy 7 206 (2022).
20. Marschall R, Nesvorný D, Deienno R, et al. “Implications for the collisional strength of Jupiter Trojans from the Eurybates family”. AJ 164 167 (2022).
21. Niraula P, Shporer A, Wong I, & de Wit J. “Revisiting Kepler transiting systems: Unvetting planets and constraining relationships among harmonics in phase curves”. AJ 163 172 (2022).
22. Addison B C, Knudstrup E, Wong I, et al. “TOI-1431b/MASCARA-5b: A highly irradiated ultra-hot Jupiter orbiting one of the hottest & brightest known exoplanet host stars”. AJ 162 292 (2021).
23. Cabot S H C, Bello-Arufe A, Mendoça J M, et al. “TOI-1518b: A misaligned ultra-hot Jupiter with iron in its atmosphere”. AJ 162 218 (2021).
24. Levison H F, Olkin C B, Noll, K S, et al. “Lucy Mission to the Trojan asteroids: Science goals”. PSJ 2 171 (2021).
25. Guerrero N M, Seager S, Huang C X, et al. “The TESS Objects of Interest catalog from the TESS Prime Mission”. ApJS 254 39 (2021).
26. Daylan T, Günther M N, Mikal-Evans T, et al. “TESS observations of the WASP-121b phase curve”. AJ 161 131 (2021).
27. Crossfield I J M, Dragomir D, Cowan N B, et al. “Phase curves of hot Neptune LTT 9779b suggest a high-metallicity atmosphere with nonzero albedo”. ApJL 903 L7 (2020).
28. Dragomir D, Crossfield I J M, Benneke B, et al. “Spitzer reveals evidence of molecular absorption in the atmosphere of the hot Neptune LT9779b”. ApJL 903 L6 (2020).
29. Chachan Y, Jontof-Hutter D, Knutson H A, et al. "A featureless infrared transmission spectrum for the super-puff planet Kepler-79d". AJ 160 201 (2020).
30. Teske J, Días M R, Luque R, et al. "TESS reveals a short-period sub-Neptune sibling (HD 86226c) to a known long-period giant planet". AJ 160 96 (2020).
31. Huang C X, Quinn S N, Vanderburg A, et al. “*TESS* spots a hot Jupiter with an inner transiting Neptune”. ApJL 892 L7 (2020).
32. Mansfield M, Bean J L, Stevenson K B, et al. “Evidence for H_2 dissociation and recombination heat transport in the atmosphere of KELT-9b”. ApJL 888 L15 (2020).
33. Chachan Y, Knutson H A, Gao P, et al. “A *Hubble* PanCET study of HAT-P-11b: A cloudy Neptune with a low atmospheric metallicity” AJ 158 244 (2019).
34. Zhou G, Huang C X, Bakos G Á, et al. “Two new HATNet hot Jupiters around A stars, and the first glimpse at the occurrence rate of hot Jupiters from *TESS*” AJ 158 141 (2019).
35. Benneke B, Knutson H A, Lothringer J, et al. “A Sub-Neptune atmosphere with solar water abundance, strong methane depletion, and Mie-scattering aerosols”. Nature Astronomy 3 813 (2019).
36. Rodriguez J E, Quinn S N, Huang C X, et al. “An eccentric massive Jupiter orbiting a sub-giant on a 9.5 day period discovered in the *Transiting Exoplanet Survey Satellite* Full Frame Images”. ApJ 157 191 (2019).
37. Poston M J, Mahjoub A, Ehlmann B L, et al. “Visible near-infrared spectral evolution of irradiated mixed ices and application to Kuiper Belt objects and Jupiter Trojans”. ApJ 856 124 (2018).
38. Ingalls J G, Krick J E, Carey S J, et al. “Repeatability and accuracy of exoplanet eclipse depths measured with post-cryogenic *Spitzer*”. AJ 152 44 (2016).
39. Krick J E, Ingalls J, Carey S, et al. “*Spitzer* IRAC sparsely sampled phase curve of the exoplanet WASP-14b”. ApJ 824 27 (2016).

40. Beichman, C, Livingston, J, Werner W, et al. "*Spitzer* observations of exoplanets discovered with the *Kepler* K2 mission". ApJ 822 39 (2016).
41. Buhler, P B, Knutson H A, Batygin, K, et al. "Dynamical constraints on the core mass of hot Jupiter HAT-P-13b". ApJ 821 26 (2016).

PRESENTATIONS

1. "JWST observations of Trojan collisional family members", *Lucy Science Team Meeting #16, Boulder, Colorado, 2026.* **[invited talk]**
2. "JWST/NIRSpec observations of a blue binary KBO: Implications for planetesimal formation and dynamical evolution", *EPSC-DPS Joint Meeting, Helsinki, Finland, 2025.*
3. "The complex surface and atmosphere of Triton as revealed by JWST", *The Pluto System 10 Years after Flyby, Laurel, Maryland, 2025.*
4. "JWST observations of Chiron: A unique active Centaur beyond 18 AU", *JWST Solar System Workshop, Meudon, France, 2025.*
5. "JWST observations of Chiron: A unique active Centaur beyond 18 AU", *AGU 2024, Washington, DC, 2024.*
6. "JWST observations of Centaurs: Uncovering the effects of nature vs. nurture on icy planetesimals", *Lucy Science Team Meeting #13, Tempe, Arizona, 2024.* **[invited talk]**
7. "JWST observations of Chiron: A unique active Centaur beyond 18 AU", *56th DPS Meeting, Boise Idaho, 2024*.
8. "Follow-up studies of active solar system objects in the LSST era", *IAU General Assembly, Cape Town, South Africa 2024.*
9. "Solar system science in the era of JWST", *Planetary Science and Space Exploration Conference, Daejeon, South Korea, 2024.* **[invited talk]**
10. "Time-domain exoplanet science with TESS and Roman: Explorations of gas giant atmospheres and orbital evolution", *COSPAR 2024, Busan, South Korea, 2024*.
11. "JWST observations of Chiron: A unique active Centaur beyond 18 AU", *COSPAR 2024, Busan, South Korea, 2024*.
12. "JWST observations of Chiron: A unique active Centaur beyond 18 AU", *The Transneptunian Solar System, Taipei, Taiwan, 2024*.
13. "Exploring the diversity of small bodies in the Solar System with JWST: Insights into planetesimal evolution past and present", *Planetary Astro Lunch Seminar, University of Maryland, 2024.* **[invited talk]**
14. "The complex surface and atmospheric properties of Triton revealed by JWST/NIRSpec", *AGU 2023, San Francisco, California, 2023.*
15. "Studying small bodies with JWST: New insights into solar system history near and far", *EPL Seminar, Carnegie Institution for Science, Washington D.C., 2023.* **[invited talk]**
16. "The complex surface and atmospheric properties of Triton revealed by JWST/NIRSpec", *55th DPS Meeting, San Antonio, Texas, 2023.*
17. "Studying small bodies with JWST: New insights into solar system history near and far", *First Year of JWST Science Conference, Baltimore, Maryland, 2023*. **[invited talk]**
18. "Exploring the compositional diversity of large Kuiper belt objects with JWST", *Asteroids, Comets, and Meteors, Flagstaff, Arizona, 2023.*
19. "The complex compositional landscape of the outer protoplanetary disk revealed through JWST GTO observations of large Kuiper belt objects", *STScI Spring Symposium, Baltimore, Maryland, 2023*.
20. "Transiting Exoplanet Science with JWST", *AAS Meeting #241, Seattle, Washington, 2023.* **[invited talk]**
21. "Kuiper Belt Science with JWST", *JWST First Science Results Conference, Baltimore, Maryland, 2022.*

22. "TESS in the Extended Mission: A powerful tool for time-domain exoplanet science", *TESS Science Team Meeting #29, Cambridge, Massachusetts, 2022.*
23. "Observational confirmation and characterization of the Ennomos collisional family", *54th DPS Meeting, London, Canada, 2022.*
24. "TOI-2109b: The shortest period gas giant yet discovered", *CHAMPS Early Career Highlight Seminar, online conference, 2022.*
25. "Observational confirmation and characterization of the Ennomos collisional family", *53rd DPS Meeting, online conference, 2021.*
26. "TOI-2109b: The shortest period gas giant yet discovered", *TESS Science Conference 2, online conference, 2021.*
27. "Ultra-hot Jupiters in the era of TESS", *JPL Exoplanet Journal Club, 2021.* **[invited talk]**
28. "Exoplanet phase curves from TESS: Results from the Primary Mission and future prospects", *AAS Meeting #237, online conference, 2021.*
29. "Exoplanet phase curves from TESS: Results from the Primary Mission and future prospects", *52nd DPS Meeting, online conference, 2020.*
30. "Icy bodies in the middle and outer Solar System: Tracers of planetary migration", *Star and Planet Formation Colloquium, University of Michigan, 2020.* **[invited talk]**
31. "Systematic phase curve study of known transiting systems from the TESS Primary Mission", *Exoplanets III, online conference, 2020.*
32. "Phase curve studies of known transiting systems with TESS", *TESS Science Conference 1, Cambridge, Massachusetts, 2019.*
33. "UV spectroscopy of Jupiter Trojans", *50th DPS Meeting, Knoxville, Tennessee, 2018.*
34. "The Trojan-Hilda-KBO connection: An observational test of solar system evolution models", *The Transneptunian Solar System, Coimbra, Portugal, 2018.* **[invited talk]**
35. "The Trojan-Hilda-KBO connection: An observational test of solar system evolution models", *AGU Fall Meeting, New Orleans, Louisiana, 2017.*
36. "The Trojan-Hilda-KBO connection: An observational test of solar system evolution models", *49th DPS Meeting, Provo, Utah, 2017.*
37. "Near-infrared transmission spectra of three cool giant gas exoplanets", *ExSoCal, Pasadena, California, 2016.*
38. "Multiband Spitzer phase curves of three highly-irradiated hot Jupiters", *AAS Meeting #227, Kissimmee, Florida, 2016.* **[invited talk]**
39. "The color-magnitude distribution of small Kuiper Belt objects", *47th DPS Meeting, National Harbor, Maryland, 2015.*
40. "Multiband Spitzer phase curves of three highly-irradiated hot Jupiters", *11th Rencontres du Vietnam, Planetary Systems: A Synergistic View, Quy Nhon, Vietnam, 2015.*
41. "Sub-populations among the Jupiter Trojans", *Asteroids, Comets, and Meteors, Helsinki, Finland, 2014.*

PUBLIC TALKS

1. "The Kuiper belt in the era of JWST", *Amateur Astronomers Inc, Union College, 2024.*
2. "A revolution in solar system astronomy with JWST", *Cosmic Explorations Speaker Series, Lunar and Planetary Institute, 2023.*
3. "Opening a new chapter of exoplanet science with JWST", *Astronomy Club, Penn State Berks, 2022.*
4. "Opening a new chapter of exoplanet science with JWST", *Edelman Planetarium, Rowan University, 2021.*
5. "Opening a new chapter of exoplanet science with JWST", *Brown Planetarium, Ball State University, 2021.*

CONFERENCE POSTERS

1. "Flux recalibration of the MIRI Low Resolution Spectrometer", *Accurate Flux Calibration in the Era of Space Astronomy and All-Sky Surveys Workshop, Baltimore, Maryland, 2024.*
2. "A detailed exploration of the complex surface chemistry and atmosphere of Triton using JWST", *The Transneptunian Solar System, Taipei, Taiwan, 2024*.
3. "JWST observations of the *Lucy* flyby targets: New spectroscopic constraints on Jupiter Trojan composition", *Asteroids, Comets, and Meteors, Flagstaff, Arizona, 2023.*
4. "TOI 618: A benchmark multi-planet system discovered using TESS photometry and long-term RV monitoring", *AAS Meeting #241, Seattle, Washington, 2023.*
5. "TESS in the Extended Mission: A powerful tool for time-domain exoplanet science", *Exoplanets IV, Las Vegas, Nevada, 2022.*
6. "Exoplanet phase curves from TESS: Results from the Primary Mission and future prospects", *TESS Science Conference 2, online conference, 2021.*
7. "TESS in the Solar System: Refining asteroid light curves with long-baseline photometry", *EPSC-DPS Joint Meeting, Geneva, Switzerland, 2019.*
8. "Phase curve studies of known transiting systems with TESS", *Extreme Solar Systems IV, Reykjavik, Iceland, 2019.*
9. "A comparison of Hildas and Jupiter Trojans using photometry, spectroscopy, and size distributions", *48th DPS Meeting, Pasadena, California, 2016.*
10. "Near-infrared transmission spectra of three cool giant gas exoplanets", *ExoClimes, Squamish, Canada, 2016.*
11. "The color-magnitude distribution of small Jupiter Trojans", *46th DPS Meeting, Tucson, Arizona, 2014.*

OBSERVING EXPERIENCE

(PI or co-PI programs, unless otherwise indicated)

James Webb Space Telescope (JWST)

- Cycle 5 GO Program #11995 (17.1 hours, NIRSpec)
  "Exploring the surface evolution of Centaurs: An empirical test of solar system dynamical history"
- Cycle 5 GO Program #9609 (15.5 hours, NIRSpec+MIRI)
  "Exploring the link between Makemake's thermal anomaly and gas production as a probe of cryovolcanism"
- Cycle 4 DD Program #9453 (11.4 hours, NIRSpec)
  "Timely follow-up of newly discovered methane fluorescence on Makemake to investigate its origin and variability"
- Cycle 4 GO Program #9078 (15.6 hours, NIRSpec)
  "Probing the origin and interiors of Jupiter Trojans through the study of collisional fragments"
- Cycle 3 GO Program #5940 (7.5 hours, NIRSpec)
  "The missing link in the Kuiper belt: Reconnaissance spectroscopy of blue binary cold classical KBOs"
- Cycle 2 DD Program #4621 (4.0 hours, NIRSpec)
  "Time-sensitive observations of Chiron: a unique active Centaur beyond 15 AU"

Hubble Space Telescope (HST)

- Cycle 25 GO-15249 (7 orbits, STIS)
  "An observational test of the dynamical instability hypothesis in the Solar System"

Gemini South

- 2024B (1.5 hours, GMOS)
  "Proving surface inhomogeneities on Patroclus-Menoetius through hemispherically-resolved spectroscopy"

Magellan Observatory

- 2019A+2019B+2020A+2021A (2.5 nights, IMACS, LDSS-3)
  "Colors of active Centaurs: A window into KBO formation and composition"
- 2020A+2021A (1 night, IMACS)
  "Probing the purported Ennomos collisional family in the Jupiter Trojans"
- 2019B+2020B (3 nights, PFS)
  "Exploring the desert: Precise radial velocity confirmation of TESS sub-Saturn candidates"

Cerro Tololo Inter-American Observatory (CTIO)

- 2022A+2022B+2023A (30 hours, CHIRON)
  "Radial velocity characterization of the massive outer companions in the TOI-618 and TOI-2488 systems"
- 2021B (10 hours, CHIRON)
  "Long-term RV monitoring of the benchmark multiplanet system TOI-618"
- 2019A+2019B+2020A (80 hours, CHIRON)
  "Exploring the desert: Precise radial velocity confirmation of TESS sub-Saturn candidates"

NASA Infrared Telescope Facility (IRTF)

- 2020B+2021B (4 nights, SpeX)
  "Constraining the composition and origin of Hilda asteroids: Exploring the 3-micron feature"
- 2016A+2016B (7 nights, SpeX)
  "Near-infrared spectra of bright Hilda asteroids: Probing the Hilda-Trojan connection"

Palomar 200-inch Hale Telescope

- 2017A+2017B (4 nights, LFC)
  "Colors and activity of Centaurs"
- 2018A (2 nights, WASP)
  "Photometric observations of mutual events of the Trojan binary Patroclus-Menoetius"

Co-I programs and other observing experience:

- 25.5 hours in JWST Cycle 1 (NIRSpec, MIRI); 42.1 hours in JWST Cycle 2 (NIRSpec); 86.2 hours in JWST Cycle 3 (NIRSpec, NIRCam); 30.3 hours in JWST Cycle 3 (NIRSpec, NIRCam, MIRI), 179.2 hours in JWST Cycle 5 (NIRSpec, MIRI)
- 30 orbits in HST Cycle 31 (WFC3)
- 4 nights at Palomar 200-inch Hale Telescope (LFC),
- 3 nights at Subaru Telescope (SuprimeCam, Hyper SuprimeCam)
- 5 nights at Keck Observatory (NIRSPEC)

TECHNICAL SKILLS

Programming: Python (expert), IDL (advanced), MATLAB (intermediate), FORTRAN (intermediate)
Developer tools: Git/GitHub, Jira
Libraries: NumPy, SciPy, Astropy, Matplotlib, pandas, scikit-learn, emcee, dynesty
Applications: LaTeX, Overleaf, Microsoft Office, ArcGIS, LabVIEW

Laboratory work: basic machine shop skills, laboratory electronics, lasers

REFERENCES

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