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RESEARCH INTERESTS

- **Planetary Habitability:** Earth-like exoplanet atmospheres and biosignatures
- **Exoplanet Spectroscopy:** Space-based transmission/emission spectroscopy of small exoplanets
- **Solar System Science:** Atmosphere and hydrological cycle systems of Titan

EDUCATION

University of Chicago, Chicago, IL

- PhD Student in Geophysical Sciences, Advisor: Prof. Edwin Kite, GPA: **4.0/4.0** 2023–
- M.S. in the Physical Sciences Division (GeoSci/Astro), GPA: **4.0/4.0** 2022
- Master’s Thesis: *The Role of Tectonic Luck and Weathering in Long-Term Climate Stability*

UCLA, Los Angeles, CA 2022–2023

- PhD Student in Planetary Science, Advisor: Prof. Jean-Luc Margot, GPA: **3.91/4.0**

UC Berkeley, Berkeley, CA 2015–2019

- B.A., Astrophysics, GPA: **3.84/4.0**, *Cum Laude*, Dean’s List

EXTERNAL RESEARCH EXPERIENCE

- **NASA Jet Propulsion Laboratory**, Advisor: Dr. Keeyoon Sung Jul–Sept 2022
- **NASA Goddard Space Flight Center**, Advisor: Dr. Conor Nixon Jan–Jul 2021
- **NASA Marshall Space Flight Center**, Advisor: Danielle Moser Aug–Dec 2019
- **NASA Ames Research Center**, Advisor: Dr. Thomas Greene Jun–Aug 2019
- **UC Berkeley**, Advisor: Dr. Gaspard Duchêne Aug 2018–May 2019

FIRST-THIRD AUTHOR PUBLICATIONS

1. (in prep) **Brandon Park Coy**, Megan Weiner Mansfield, Edwin Kite, et al., “A Thick Atmosphere on the Ultra-Short Period super-Earth HD 3167 b”.
2. (in review) Sebastian Zieba, Laura Kreidberg, **Brandon Park Coy**, and 13 co-authors. “JWST mid-infrared spectroscopy of LHS 3844 b reveals a dark and featureless surface”, *Nature Astronomy*
3. Qiao Xue, Michael Zhang, **Brandon Park Coy**, and 14 co-authors. “The JWST Rocky Worlds DDT Program reveals GJ 3929b to likely be a bare rock”, *The Astrophysical Journal Letters*, 995, L52, 2025.
4. Xuan Ji, Richard D Chatterjee, **Brandon Park Coy** and Edwin Kite. “The Cosmic Shoreline Revisited: A Metric for Atmospheric Retention Informed by Hydrodynamic Escape”, *The Astrophysical Journal*, 992, 2, 2025.
5. **Brandon Park Coy**, Jegug Ih, Edwin S. Kite, Daniel D.B. Koll, Moritz Tenthoff, Jacob L. Bean, Megan Weiner Mansfield, Michael Zhang, Qiao Xue, Eliza M.-R. Kempton, Kay Woltharth, Renyu Hu, Xintong Lyu, Christian Wohler. “Population-level Hypothesis Testing with Rocky Planet Emission Data: A Tentative Trend in the Brightness Temperatures of M-Earths”, *The Astrophysical Journal*, 987, 22, 2025.
6. Rafael Luque, **Brandon Park Coy**, and 10 co-authors. “A dark, bare rock for TOI-1685 b from a JWST NIRSpec G395H phase curve”, *The Astronomical Journal*, 170, 49, 2025.
7. Conor Nixon, Bruno Bezard*, Thomas Cornet*, **Brandon Park Coy***, Imke de Pater*, Mael Es-Sayeh*, Heidi Hammel*, Emmanuel Lellouch*, Nicholas Lombardo*, Manuel Lopez-Puertas*, Juan Lora*, Pascal Rannou*, Sebastien Rodriguez*, Nicholas Teanby*, Elizabeth Turtle*, et al., “Titan’s Atmosphere in Late Northern Summer from JWST and Keck”. (*These authors contributed equally) *Nature Astronomy*, 1, 2025.

8. **Brandon Park Coy**, Edwin Kite, and R.J. Graham. “The Role of Tectonic Luck in Long-term Habitability of Abiotic Earth-like Planets”, *Planetary Science Journal*, 6(9), 218, 2025.
 9. **Brandon Park Coy**, C Nixon, N Rowe-Gurney, R Achterberg, N Lombardo, L Fletcher, and P Irwin. “Spitzer IRS Observations of Titan as a Precursor to JWST MIRI Observations”. *Planetary Science Journal*, Vol. 4 (6), p. 114, 2023.
- Served as the reviewer for an Astrophysical Journal article

CONTRIBUTED PUBLICATIONS

1. Michael Zhang...**Brandon Park Coy** et al. ‘A carbon-rich atmosphere on a windy pulsar planet’, *The Astrophysical Journal Letters*, 995, L64, 2025
2. T. Bertin...Keeyoon Sung, **Brandon Park Coy** et al., “The HITRAN2024 methane update”, *JQSRT*, 349, 109736, 2025.
3. Megan Weiner Mansfield...**Brandon Park Coy** et al. “No Thick Atmosphere on the Terrestrial Exoplanet Gl 486b”, *The Astrophysical Journal Letters*, 975, L22, 2024
4. Qiao Xue...**Brandon Park Coy** et al. “JWST Thermal Emission of the Terrestrial Exoplanet GJ 1132b”, *The Astrophysical Journal Letters*, 973, L8, 2024
5. Jean-Luc Margot...**Brandon Park Coy** et al. “A Search for Technosignatures Around 11,680 Stars with the Green Bank Telescope at 1.15–1.73 GHz”. *The Astronomical Journal*, Vol. 166 (5), p. 206, 2023.
6. Gaspard Duchêne, J Oon, RJ De Rosa, P Kantorski, **Brandon Park Coy** and 6 co-authors, “A low-mass companion desert among intermediate-mass visual binaries: The scaled-up counterpart to the brown dwarf desert”. *Monthly Notices of the Royal Astronomical Society*, Vol. 519 (1), p. 778, 2023.
7. Edward Molter...Gaspard Duchene, **Brandon Park Coy** et al. “Analysis of Neptune’s 2017 Bright Equatorial Storm”. *Icarus* Vol. 321 p. 324, 2019.

AWARDS/GRANTS

- **JWST Cycle 4 GO 7407, 7875, and 8005 Co-I**, NASA/STScI 2025
- **Las Cumbres Observatory**, 2025A Observing Proposal PI, *Starspot Characterization of HD 207496* 2024
- **Illinois Space Grant Fellowship**, NASA/Illinois Space Grant Consortium (\$10,000) 2024
- **JWST Cycle 3 GO 6284 PI**, NASA/STScI (\$150,000) 2024
- **McCormick Fellowship**, University of Chicago (\$4,500/year) 2023, 2024
- **Conference Travel Grant**, STScI (\$2,500) 2023
- **Incoming Student Fellowship**, UCLA (\$17,000) 2022

TALKS AND POSTERS

- **The LAVA LAMPS Survey: Characterizing 10 Ultra-Hot Lava Worlds in Thermal Emission with JWST**
 - **Talk Rocky Worlds 4 Conference** (Groningen) 2026
- **Atmospheric Theoretical Expectations for Rocky Worlds DDT Discoveries**
 - **Invited Talk AAS 245 Rocky Worlds DDT Special Session** 2025
- **Population-level Hypothesis Testing with Rocky Planet Emission Data: A Tentative Trend in the Brightness Temperatures of M-Earths**
 - **Talk Atmospheric Escape and Replenishment Workshop** (STScI) 2025
 - **Talk Outer Worlds Laboratory Summer School** (UCSC) 2025
 - **Talk Atmospheric Characterization of Rocky to Giant Exoplanets in Thermal Emission with JWST Conference** (Aspen) 2025
 - **Poster AAS 245 Winter Meeting** 2025
- **What Sets the C/O ratio in sub-Neptune Atmospheres?**
 - **Invited Talk Density Matters Workshop** 2024
 - **Lightning Talk Great Lakes Exoplanet Area Meeting** 2023

- **DISKWORLD: Modeling the Limited Sensitivity of Planetary Habitability to Tectonic Noise**
 - **Poster** AGU Fall 2023 Conference 2023
- **Spitzer IRS Observations of Titan as a Precursor to JWST MIRI Observations**
 - **Poster** Planetary Systems and the Origins of Life in the Era of JWST (STScI) 2023
 - **Talk** NASA Outer Planets Assessment Group Meeting 2021, 2023
 - **Talk** NASA Astrobiology Institute Titan Meeting 2021
 - **Poster** Division for Planetary Sciences of the American Astronomical Society 2021
 - **Poster** Titan Through Time Conference 2021
 - **Talk** International Symposium on Molecular Spectroscopy 2021

TEACHING

- **English and Math Instructor** Elite Educational Institute, Seoul, Korea Jan 2020–Dec 2020
 - Taught conversational and written English to elementary school, junior high school, and high school students. Also taught various mathematics subjects including calculus and geometry.
- **Undergraduate Student Instructor** UC Berkeley
 - Astro C10: Introduction to Astronomy Aug–Dec 2018
 - Astro 9: Python Programming in Astronomy Jun–Aug 2018

SERVICE

- **UChicago Exoplanet Journal Club Organizer** 2025–2026
- **Rocky Worlds 4 Outbreak Session Chair (“Airless Planetary Surfaces: Moon, Mercury, and Beyond the Solar System”)** 2026