

CURRICULUM VITAE  
– BRYCE THEODORE BOLIN –

NASA Goddard Space Flight Center  
Planetary Systems Laboratory  
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## EDUCATION

- Université Côte d’Azur – Ph.D. in Sciences de la Planete et de l’Univers, May 2018**  
*l’Ecole Doctorale Sciences Fondamentales et Appliquées, ED.SFA (ED 364)*  
*Thesis topic: Identifying asteroid families older than 2 billion years*  
*Supervisors: Alessandro Morbidelli (morby@oca.eu) and Marco Delbo (marco.delbo@oca.edu)*
- University of Central Florida – M.S. in Physics**  
*Department of Physics, College of Sciences*
- University of Florida – B.S. in Physics**  
*Department of Physics, College of Liberal Arts & Sciences*

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## RESEARCH INTERESTS & SKILLS

### *Research Interests*

Application of data science methods for the discovery and characterization of asteroids and comets  
Measuring the physical properties of asteroids and comets from optical and near-infrared observations  
Formation of planetesimals and their implication in the formation of planetary systems  
Dynamics of Solar System small body populations, asteroids and comets

### *Skills*

Extensive programming experience in **Python**  
Proficiency in **C, Fortran, IDL, Perl, IRAF, MySQL**, N-body integrators **SWIFT** and **REBOUND**

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## EMPLOYMENT HISTORY

- 2022 – present **NASA Postdoctoral Program Fellow**, NASA Goddard Space Flight Center  
2019 – 2022 **Postdoctoral Scholar**, Div. of Phy., Math. and Astro., Cal. Inst. of Tech.  
2018 – 2019 **Postdoctoral Fellow**, B612 Asteroid Institute/University of Washington  
2014 – 2018 **Doctorant en astrophysique**, Université Côte d’Azur  
2013 **Adjunct Instructor**, Honolulu Community College  
2012 – 2014 **NEO Research Analyst**, Institute for Astronomy, Univ. of Hawai’i at Mānoa  
2011 – present **Adjunct Instructor**, Valencia College  
2009 – 2011 **Graduate Teaching Assistant**, University of Central Florida

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## GRANTS, AWARDS AND HONORS

**Total amount awarded: \$2.27M USD ( as PI: \$1.37M USD | as co-I: \$0.90 M USD )**

- 2025 - **NASA ROSES Yearly Opportunities for Research in Planetary Defense**,  
PI (\$204,077, pending) “Testing the origins of Earth’s co-orbitals”  
2024 - **Keck Principal Investigator Data Award**, PI (\$16,300)  
“Constraining the taxonomy of Neptunian Trojans in the NIR”

- 2024 - **James Webb Space Telescope Cycle 3**, Guest Observer - 6518, PI (\$215,705, pending)  
 “Multi-Cycle monitoring of the volatile evolution of a returning planetesimal as it approaches perihelion”
- 2024 - **Meteoritical Society Travel Fund** (\$833)
- 2023 - **James Webb Space Telescope Cycle 2**, Guest Observer - 4198, PI (\$207,843)  
 “Multi-Cycle monitoring of the volatile evolution of a returning planetesimal as it approaches perihelion”
- 2023 - **Gordon Research Conference and Seminar** (\$1,155)
- 2023 - **James Webb Space Telescope Cycle 1**, Director’s Discretionary time - 2747, PI (\$49,999)  
 “The Volatile Content of Oort Cloud Comet C/2014 UN271”
- 2022 - **NASA Postdoctoral Program Fellowship**, PI (\$252,000)  
 “Prospecting for the Solar System’s Original Planetesimals”
- 2022 - **Hubble Space Telescope Cycle 29**, Guest Observer - 16878, PI (\$88,911)  
 “Determining the coma contents of the incoming Oort Cloud comet C/2014 UN271”
- 2021 - **Asteroid (42177) 2001 CL<sub>22</sub>**, named Bolin
- 2021 - **JPL/Caltech Presidents and Directors Research and Development Fund**, co-I (\$200,000)  
 “Synthetic tracking follow-up of Zwicky Transient Facility Near-Earth Object candidates”
- 2021 - **Jet Propulsion Laboratory HBCU/MSI partnership**, co-I (\$50,000)  
 “Follow-up of Near-Earth Objects”
- 2021 - **NASA Yearly Opportunities for Research in Planetary Defense**, co-I (\$641,005)  
 “NEO Discovery and Study with the Zwicky Transient Facility (ZTF)”
- 2020 - **Hubble Space Telescope Cycle 27**, Guest Observer - 16077, PI (\$49,117)  
 “Determining the cause of activity of the first active Trojan, 2019 LD2”
- 2020 - **Hubble Space Telescope Cycle 27**, Guest Observer - 16040, PI (\$94,943)  
 “Constraining the coma volatile content of interstellar comet 2I/Borisov”
- 2019 - **NASA Small Bodies Assessment Group Early Career Travel Award** (\$1,000)
- 2016 - **Europlanet Travel Bursary** (€450)
- 2014 - **Contrat Doctoral de l’Université Côte d’Azur** (€45,000)

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## ADVISING & TEACHING

### *Advising and Mentoring*

Students co-supervised:

- Laura-May Abron**, lead guide at Griffith Observatory on multi-wavelength spectrophotometric characterization of Main Belt comets and asteroids, 2024 - present.
- Mehul Ghosal**, undergraduate student at the University of Hawai‘i at Mānoa, with Dr. Robert Jedicke on rotational lightcurves of meter-scale near-Earth asteroids, 2021 - 2023. Now a Master’s student in education at the American Museum of Natural History.
- Vishwajeet Swain**, graduate student at the Indian Institute of Technology, Bombay, with Prof. Varun Bhalerao on observations of small Solar System bodies with the Zwicky Transient Facility, 2021 - present.
- Kritti Sharma**, undergraduate student at the Indian Institute of Technology, Bombay, with Prof. Varun Bhalerao on observations of near-Earth asteroids with the Zwicky Transient Facility, 2020 - 2022. Now a graduate student in astronomy at Caltech.
- Yu-Li Cheng**, Master’s student at National Central University, with Dr. Zhong-Yi Lin on observations of near-Earth asteroids with the Zwicky Transient Facility, 2020 - 2022.
- Chen-Yen Hsu**, Master’s student at National Central University, with Dr. Zhong-Yi Lin on observations of near-Earth asteroids with the Zwicky Transient Facility, 2020 - 2022.

- Josiah Purdum**, master's student at San Diego State University with, Prof. Robert Quimby on observations of active asteroid Gault, 2019 - 2022. Now a Telescope Operations Engineer at the California Institute of Technology.
- Kunal Deshmukh**, undergraduate student at the Indian Institute of Technology, Bombay with, Prof. Varun Bhalerao on observations of near-Earth asteroids with the Zwicky Transient Facility, 2019 - 2021. Now a graduate student in astronomy at KU Leuven.
- Christina Lindberg**, postgraduate at the University of Washington, with Dr. Daniela Huppenkothen on Gaussian processes analysis of asteroid lightcurves, 2018 - 2021. Now a Graduate Student in Astronomy at Johns Hopkins University.
- Bryce Kalmbach**, graduate student at the University of Washington, with Prof. Andrew J. Connolly on Kuiper Belt object detection, 2018 - 2019. Now a Postdoctoral Researcher in Astronomy at the University of Washington.
- Allison Bratcher**, undergraduate student at the University of Central Florida, with Prof. Josh Colwell on UVIS stellar occultation research, 2011. Now a Data Scientist at Cromulence.

### *Classroom Experience*

- PH PH556**, Guest Lecturer, *Introduction to Astrophysics*, Undergraduate and Graduate Level Course, Department of Physics, Indian Institute of Technology Bombay, Spring 2021
- PHYS 51V**, Course Instructor, *Introductory Applied Physics*, Undergraduate Level Course, Department of Natural Sciences, Honolulu Community College, Spring 2013
- AST 1002**, Course Instructor, *Introduction to Astronomy*, Undergraduate Level Course, Department of Sciences, Valencia College, Summer 2011 - present
- PHY 2049L**, Laboratory Instructor, *Physics for Engineers II Lab*, Undergraduate Level Course, Department of Physics, University of Central Florida, Fall 2010 - Spring 2011
- PHY 2049HL**, Laboratory Instructor, *Honors Physics for Engineers II Lab*, Honors College Undergraduate Level Course, Department of Physics, University of Central Florida, Spring 2011
- PHY 2060L**, Laboratory Instructor, *General Physics Lab*, Undergraduate Level Course, Department of Physics, University of Central Florida, Spring 2010 - Summer 2010

## **SERVICE & OUTREACH**

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### *Leadership*

- Keck Wide-Field Imager Scientific Advisory Committee member (2021 - present)
- Zwicky Transient Facility Solar System Working Group Lead (2020 - 2022)
- LSST Solar System Science Collaboration Inner Solar System Working Group Lead (2019 - 2021)

### *Professional Service*

- NASA Keck Telescope Allocation Committee Solar System panelist (2024-present)
- JWST* Expert, General Observer, and Director's Discretionary proposal reviewer (2023 - present)
- National Science Foundation Planetary Science review panelist (2024-present)
- NOIRLab Time Allocation Committee Solar System panelist (2023-present)
- JWST* General Observer proposal reviewer (2023 - present)
- Grant reviewer for for the Israeli Ministry of Innovation, Science and Technology (2022)
- External reviewer for for the National Science Center, Poland (2021 - present)
- External reviewer for the National Research, Development and Innovation Office, Hungary (2020)
- HST* General Observer and Director's Discretionary proposal reviewer (2019 - present)
- Gemini Fast Turnaround program reviewer (2019 - present)
- Grant reviewer for the Austrian Science Fund (2019)
- Referee for the *Astronomical Journal*, *Astronomy & Astrophysics*, *Astrophysical Journal Letters*, *Icarus*, *Monthly Notices of the Royal Astronomical Society*, *Nature Astronomy*, *Planetary Science Journal*, and *Planetary and Space Science*, 31 papers total (2016 - present)

*Outreach*

## Public Outreach Volunteer:

Shadow the Scientist, Santa Cruz Science Internship, Santa Cruz, California (Spring 2024)  
 Shadow the Scientist, NASA Infrared Telescope Facility, Hilo, Hawai'i (Spring 2024)  
 Pint of Science, Santa Monica, California (Spring 2024)  
 Nerd Nite, Venice Beach, California (Spring 2024)  
 Shadow the Scientist, University of California, Santa Cruz, California (Spring 2024)  
 Royal Astronomical Society of Canada, London, Ontario (Spring 2023)  
 Star Party, Sir Isaac Brock Public School, London, Ontario (Fall 2022)  
 Guest Lecture, Indian Institute of Technology Bombay, Mumbai, India (Spring 2021)  
 Conference for Undergraduate Women in Physics, University of Wash., Seattle, WA (January 2019)  
 B612 Foundation Quarterly Webinar, Mountain View, CA (May 2018)  
 La Nuit Coupoles Ouvertes, Caussols, France (October 2017)  
 Asteroid Day Luxembourg, Luxembourg City, Luxembourg (June 2017)  
 La Nuit Coupoles Ouvertes, Caussols, France (June 2015)  
 Honolulu Zoo Educational Star Party, Honolulu, HI (July 2013)  
 Institute for Astronomy Open House, Honolulu, HI (April 2013)  
 Institute for Astronomy Comet Pan-STARRS viewing, Honolulu, HI (March 2013)  
 Holy Nativity School Star Party, Honolulu, HI (February 2013)  
 Bernice Pauahi Bishop Museum Star Party, Honolulu, HI (January 2013)

## Event Volunteer:

Session chair, Asteroids, Comets and Meteors 2023, Flagstaff, Arizona (Summer 2023)  
 Session chair, American Astronomical Society, DPS meeting 54, London, Ontario (Fall 2022)  
 Session monitor, 20th Meeting of the NASA Small Bodies Assessment Group (January 2019)  
 Session monitor, Division of Planetary Sciences (October 2017)  
 Session monitor, Division of Planetary Sciences (October 2016)  
 Session monitor, Division of Planetary Sciences (October 2013)  
 Session monitor, Division of Planetary Sciences (October 2012)  
 Volunteer Judge, Hawai'i State Science Fair (April 2012)  
 Session monitor, The Next-Generation Suborbital Researchers Conference (February 2011)

**SELECTED PRESS RELEASES**

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6. "The Story Behind a Once-in-a-Lifetime Green Comet That's About to Fly Past Earth", Time Magazine, January 31, 2023, [\[Link\]](#).
5. "First inter-Venusian Asteroid Hints at a New Population", Sky & Telescope, August 25, 2022, [\[Link\]](#).
4. "Comet Makes a Pit Stop Near Jupiter's Asteroids", NASA News Releases, February 25, 2021, [\[Link\]](#).
3. "Tiny Asteroid Buzzes by Earth the Closest Flyby on Record", NASA News Releases, August 18, 2020, [\[Link\]](#).
2. "It Came From Outside Our Solar System and Now Its Breaking Up", The New York Times, April 7, 2020, [\[Link\]](#).
1. "Alien comets may be common, object from beyond Solar System suggests", Science, October 29, 2019, [\[Link\]](#).

**INVITED CONFERENCE TALKS**

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2. University of Arizona, Dust Devils in the Sonoran Desert, invited review talk, “Debris disks put into context: The Solar system as a debris disk”, Tucson, Arizona, March 28, 2024
1. 20th Meeting of the NASA Small Bodies Assessment Group, Lunar and Planetary Institute, invited early career talk, “Identification of a primordial asteroid family constrains the original planetesimal population”, Houston, Texas, January 29, 2019

## INVITED COLLOQUIA & SEMINAR TALKS

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31. Herzberg Astronomy and Astrophysics Research Centre, Astrophysics Seminar, Victoria, British Columbia, April 4, 2024
30. NOIRLab Gemini North Hilo Base Facility, Gemini North Talks, Hilo, Hawaii, February 20, 2024
29. Canada France Hawaii Telescope, Astronomy Colloquium, Waimea, Hawaii, February 15, 2024
28. Leicester University, Planetary Science Seminar, Leicester, England, January 29, 2024
27. Goddard Space Flight Center, Planetary Systems Laboratory Seminar, Greenbelt, Maryland, January 10, 2024
26. Observatoire de la Côte d’Azur, Théorie et Observations en Planétologie Seminar, Nice, France, December 14, 2023
25. Steward Observatory, University of Arizona, Origins Seminar, Tucson, Arizona, November 21, 2023
24. Southwest Research Institute, *Lucy* Science Team Meeting, Boulder, Colorado, May 11, 2023
23. National Optical-Infrared Astronomy Research Laboratory, Friday Lunch Astrophysics Seminar Hour, Tucson, Arizona, April 21, 2023
22. Space Telescope Science Institute, Exoplanets, Star and Planet Formation Seminar, Baltimore, Maryland, March 6, 2023
21. Royal Astronomical Society of Canada, London Centre Monthly Meeting, London, Ontario, February 17, 2023
20. Institute for Astronomy, University of Hawai‘i at Mānoa, Astrocoffee, Honolulu, Hawai‘i, September 16, 2022
19. Lawrence Livermore National Laboratory, Space Science Institute Seminar, Livermore, California, April 5, 2022
18. Harvard & Smithsonian, Center for Astrophysics, Stars and Planets Seminar, Cambridge, Massachusetts, February 9, 2022
17. Observatoire de la Côte d’Azur, Théorie et Observations en Planétologie Seminar, Nice, France, September 16, 2021
16. National Optical-Infrared Astronomy Research Laboratory, Friday Scientific Lunch Talk, Tucson, Arizona, September 3, 2021
15. Institute for Astronomy, University of Hawai‘i at Mānoa, Astronomy Colloquium, Honolulu, Hawai‘i, April 14, 2021
14. IPAC/California Institute of Technology, IPAC Seminar, Pasadena, California, February 17, 2021

13. California Institute of Technology, Division of Geological and Planetary Sciences Seminar, Pasadena, California, January 26, 2021
12. Jet Propulsion Laboratory, Astrophysics Seminar, Pasadena, California, November 19, 2020
11. Observatoire de la Côte d'Azur, Théorie et Observations en Planétologie Seminar, Nice, France, September 10, 2020
10. California Institute of Technology, IPAC, Greater IPAC Science Symposium, Pasadena, California, August 24, 2020
9. California Institute of Technology, Division of Geological and Planetary Sciences Seminar, Pasadena, California, November 12, 2019
8. San Diego State University, Astronomy Colloquium, San Diego, California, October 4, 2019
7. University of California, Los Angeles, Planetary Science Seminar, Los Angeles, California, October 3, 2019
6. Observatoire de la Côte d'Azur, Théorie et Observations en Planétologie Seminar, Nice, France, March 21, 2019
5. University of Washington, Department of Astronomy Colloquium, Seattle, Washington, October 4, 2018
4. University of Washington, DIRAC seminar, Seattle, Washington, March 24, 2017
3. University of Helsinki, Department of Physics Seminar, Helsinki, Finland, January 15, 2016
2. Observatoire de la Côte d'Azur, Théorie et Observations en Planétologie Seminar, Nice, France, May 21, 2015
1. Observatoire de la Côte d'Azur, Théorie et Observations en Planétologie Seminar, Nice, France, October 14, 2014

#### CONTRIBUTED CONFERENCE TALKS

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30. *The volatile contents of giant Oort cloud planetesimal C/2014 UN271*, British Planetary Science Conference, University of Leicester, Leicester, United Kingdom, June 19, 2024
29. *A new asteroid family as a potential source of L-chondrites*, Impact Workshop, University of Rochester, Rochester, New York, April 9, 2024
28. *The Volatile Content of Giant Oort Cloud Comet C/2014 UN271 During Its Return to the Planetary Region*, Oak Ridge Associated Universities Site Visit, Goddard Space Flight Center, Greenbelt, Maryland, October 26, 2023
27. *The Volatile Content of Giant Oort Cloud Comet C/2014 UN271 During Its Return to the Planetary Region*, American Astronomical Society, DPS meeting 55, San Antonio, Texas, October 5, 2023
26. *The Volatile Content of Giant Oort Cloud Comet C/2014 UN271 During Its Return to the Planetary Region*, Active Bodies in the Solar System, Stará Lesná, Slovakia, September 8, 2023
25. *The Volatile Content of Giant Oort Cloud Comet C/2014 UN271 During Its Return to the Planetary Region*, Asteroids, Comets and Meteors, Flagstaff, Arizona, June 22, 2023
24. *(594913) 'Ayló'chaxnim , a kilometer-scale asteroid inside Venus' orbit*, American Astronomical Society, DPS meeting 54, London, Ontario, October 4, 2022

23. *ZTF Solar System Working Group Overview*, ZTF Spring Meeting, Paris, France, May 13, 2022
22. *Establishing the Population of Asteroids Located Entirely within the Orbit of Venus*, The 2021 Greater IPAC Technology Symposium, Pasadena, California, October 13, 2021
21. *Establishing the population of asteroids located wholly inside the orbit of Venus*, American Astronomical Society, DPS meeting 53, virtual, October 4, 2021
20. *Establishing the Population of Asteroids Located Entirely within the Orbit of Venus*, The 2021 Greater IPAC Science Symposium, Pasadena, California, August 2, 2021
19. *Discovery and characterization of the first inner-Venus Asteroid 2020 AV<sub>2</sub>*, American Astronomical Society, DPS meeting 52, Spokane, Washington, October 27, 2020
18. *Science highlights from ZTF: exotic asteroids*, Celebrating ZTF-I & Soft Launch of ZTF-II , Pasadena, California, October 23, 2020
17. *Discovery and characterization of the first inner-Venus Asteroid 2020 AV<sub>2</sub>*, Europlanet Science Congress, September 25, 2020
16. *Keck Time-resolved Spectrophotometry of Temporarily-Captured Minimoons 2020 CD<sub>3</sub>*, Europlanet Science Congress, September 25, 2020
15. *VISIR Characterization of the Nucleus, Morphology, Activity, Spin-Pole Orientation & Rotation of Interstellar Comet 2I/Borisov by Earth- and Space-based Facilities*, Europlanet Science Congress, September 25, 2020
14. *Observations of Solar System Bodies by the Zwicky Transient Facility*, ZTF Collaboration Meeting, March 23, 2020
13. *Active Asteroid (6478) Gault*, American Astronomical Society, DPS meeting 51, Geneva, Switzerland, September 17, 2019
12. *Active Asteroid (6478) Gault*, The Main Belt: A Gateway to the Formation and Early Evolution of the Solar System, Villasimius, Sardinia, June 5, 2019
11. *Prospecting for the Solar System's Original Planetesimals*, Brainstorming Meeting on Planet Formation, Frejus, France, March 18, 2019
10. *The Galactic Orbit of 1I/2017 U1 'Oumuamua*, American Astronomical Society, DPS meeting 50, Knoxville, Tennessee, October 24, 2018
9. *Identification of asteroid families older than 2 billion years* , A Century of Asteroid Families, IAU Focus Meeting, Vienna, Austria, August 29, 2018
8. *APO Time Resolved Color Photometry of Highly-Elongated Interstellar Object 1I/'Oumuamua*, LSST@Europe3, Lyon, France, June 14, 2018
7. *APO Time Resolved Color Photometry of Highly-Elongated Interstellar Object 1I/'Oumuamua*, 18th Meeting of the NASA Small Bodies Assessment Group, NASA Ames, Mountain View, California, January 17-18, 2018
6. *Identifying asteroid families >2 Gyrs*, American Astronomical Society, DPS meeting 49, Provo, Utah, October 16, 2017
5. *Size-dependent modification of Asteroid Family Yarkovsky V-shapes*, Asteroids, Comets, Meteors 2017, Montevideo, Uruguay, April 12, 2017

4. *Yarkovsky V-shape identification of asteroid families*, American Astronomical Society, DPS meeting 48, Pasadena, California, October 18, 2016
3. *The search for ancient asteroid families*, Journées Doctorales de la Physique Niçoise, Saint-Étienne de Tinée, France, March 22, 2016
2. *Minimoon Discovery with Ground-based Radar Facilities*, American Astronomical Society, DPS meeting 45, Denver, Colorado, October 8, 2013
1. *The Detectability of Earths Temporarily Captured Orbiters*, American Astronomical Society, DPS meeting 44, Reno, Nevada, October 17, 2012

## POSTERS

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9. *JWST characterization of the volatiles of C/2014 UN<sub>271</sub> Bernardinelli-Bernstein at 18 au*, Origins of Solar Systems, Gordon Research Conference, South Hadley, Massachusetts, June 12, 2023
8. *(594913) 'Ayl'chaznim, a kilometer-scale asteroid inside Venus' orbit*, Origins of Solar Systems, Gordon Research Seminar, South Hadley, Massachusetts, June 11, 2023
7. *Groundbreaking Solar System discoveries at Palomar Observatory*, Palomar Science Meeting 2023, Pasadena, California, June 2, 2023
6. *The volatile contents of Oort Cloud comet C/2014 UN<sub>271</sub>*, STScI Spring Symposium: Planetary Systems and the Origins of Life in the Era of JWST, Baltimore, Maryland, May 17, 2023
5. *Impact Probability Evolution of Virtual Impacting Asteroids*, American Astronomical Society, AAS meeting 233, id.263.02, Seattle, Washington, January 6, 2019
4. *Multiwavelength phase curves for asteroid families in the SDSS Moving Object Catalogue*, A Century of Asteroid Families, IAU Focus Meeting, Vienna, Austria, August 28, 2018
3. *A new method to identify asteroid families older than 2 Ga*, IAU General Assembly, Honolulu, Hawai'i, August 3, 2015
2. *Detecting Earth's Minimoons*, Asteroids, Comets and Meteors, Niigata, Japan, May 16, 2012
1. *Cassini UVIS Observations of Saturn's Faint, Narrow Ringlets*, EPSC-DPS Joint Meeting 2011, Nantes, France, October 7, 2011

## OBSERVING EXPERIENCE

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(as principal investigator)

- 0.9-meter *Spitzer Space Telescope* (IRAC): 4.8 h
- 2.2-meter University of Hawai'i (Tek 2048), Maunakea, HI: 12 nights
- 2.4-meter *Hubble Space Telescope* (WFC3): 21 orbits
- 3.2-meter NASA Infrared Telescope Facility (SpeX), Maunakea, HI: 13.5 nights
- 3.5-meter Astrophysical Research Consortium (ARTIC, NICFPs, DIS), Sunspot, NM: 14 nights
- 3.6-meter Canada France Hawai'i Telescope (MegaCam), Maunakea, HI: 13 hours queue time
- 5.1-meter Hale Telescope (WASP, CHIMERA, DBSP, TripleSpec), Palomar, CA: 7 nights
- 6.5-meter *James Webb Space Telescope* (NIRSpec): 41 h
- 8.1-meter Gemini North (GMOS, GNIRS), Maunakea, HI: 28.2 h band 1/ 10.0 h band 2,3 queue time
- 8.1-meter Gemini South (GMOS, F2), Cerro Pachón, Chile: 12.0 h band 1/ 12.4 h band 2,3 queue time



10.0-meter Keck I (LRIS, MOSFIRE), Maunakea, HI: 4.3 nights  
 10.0-meter Keck II (NIRES), Maunakea, HI: 1.0 night

## PUBLICATIONS

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**Total publications:** 57 ( **1st- and 2nd-authored:** 25 | **co-author:** 32 | **citations:** 4464 | **h-index:** 26 )

## FIRST- AND SECOND-AUTHORED PUBLICATIONS

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25. **Bolin, B.T.**, Denneau, L., Fremling, C., Athanasopoulos, D. et al. 2024, *The discovery and characterization of 311P/(P/2013 P5) PANSTARRS*, in prep.
24. **Bolin, B.T.**, Morbidelli, A., Avdellidou, C., Delbo, M. et al. 2024, *Discovery of a 2 billion year-old, high inclination, high-albedo family*, in prep.
23. **Bolin, B.T.**, & Coughlin, M.W. 2024, *Identification and localization of Cometary Activity in Solar System Objects with Machine Learning*, submitted to Elsevier.
22. **Bolin, B.T.**, Brown, M.E., Saki, M., Prialnik, D. et al. 2024, *The hypervolatile contents of a distantly active planetesimal times the formation of the Oort Cloud*, submitted to Nature.
21. **Bolin, B.T.**, Masci, F.J., Duev, D.A., Ahumada, T. et al. 2024, *Palomar Twilight Survey of 'Ayló'chaxnim and Atira Asteroids, and Short- and Long-Period Comets*, submitted to Icarus.
20. **Bolin, B.T.**, Ghosal, M., Jedicke, R. 2024, *Rotation periods and colours of 10-m scale near-Earth asteroids from CFHT target of opportunity streak photometry*, MNRAS, 527, 2, p. 1633-1637.
19. **Bolin, B.T.**, Masci, F.J., Duev, D.A., Milburn, J.W. et al. 2024, *Palomar discovery and initial characterization of naked-eye long period comet C/2022 E3 (ZTF)*, MNRAS, 527, L42-L46.
18. Cheng, Y.-C., **Bolin, B.T.**, Kelley, M.S.P., Bodewits, D. et al. 2023, *Post-Perihelion Cometary Activity on the Outer Main Belt Asteroid 2005 XR132*, PSJ, 5, 3, 78, 11 pp.
17. **Bolin, B.T.**, Noll, K.S., Caiazzo, I., Fremling, C. et al. 2023, *Keck and Gemini spectral characterization of Lucy mission fly-by target (152830) Dinkinesh*, Icarus, 400, 115562.
16. **Bolin, B.T.**, Fremling, C., Morbidelli, A., Noll, K.S. et al. 2023, *Keck, Gemini, and Palomar 200-inch visible photometry of red and very-red Neptunian trojans*, MNRAS, 521, 1, L29L33.
15. **Bolin, B.T.**, Ahumada, T., van Dokkum, P., Fremling, C. et al. 2023, *Preliminary Zwicky Transient Facility survey completeness estimates of the 'Ayló'chaxnim asteroid population*, Icarus, 394, 115442.
14. **Bolin, B.T.**, Ahumada, T., van Dokkum, P., Fremling, C. et al. 2022, *The discovery and characterization of (594913) 'Ayló'chaxnim, a kilometre sized asteroid inside the orbit of Venus*, MNRAS, 517, 1, L49-L54.
13. Duev, D.A., **Bolin, B.T.**, Graham, M.J., Kelley, M.S.P. et al., 2021, *Tails: Chasing Comets with the Zwicky Transient Facility and Deep Learning.*, AJ, 161, 218.
12. Purdum, J.N.<sup>†</sup>, Lin, Z.-Y.\* , **Bolin, B.T.\***, Sharma, K. et al. 2021, *APO, GROWTH, P200 and ZTF Time-series and Phasecurve Photometry of Episodically-Active Asteroid (6478) Gault in a Quiescent State*, ApJL, 911, 2, L35.
11. **Bolin, B.T.**, Fernandez, Y.R., Lisse, C.M., Holt, T.R. et al. 2021, *Initial Visible and Near-IR Characterization of P/2019 LD<sub>2</sub> (ATLAS), an Active Transitioning Centaur Among the Trojans, with Hubble, Spitzer, Keck, APO and GROWTH Imaging and Spectroscopy*, AJ, 161, 3, 116.

10. **Bolin, B.T.**, Fremling, C., Holt, T.R., Hankins, M.J. et al., 2020, *Characterization of Temporarily Captured Minimoons 2020 CD3 by Keck Time-resolved Spectrophotometry*, ApJL, 900, 2, L45.
9. **Bolin, B.T.** & Lisse, C.M. 2020, *Constraints on the spin-pole orientation, jet morphology, and rotation of interstellar comet 2I/Borisov with deep HST imaging*, MNRAS, 497, 4, p. 4031-4041.
8. **Bolin, B.T.**, Lisse, C.M., Kasliwal, M.M., Quimby, R. et al. 2020, *Characterization of the Nucleus, Morphology, and Activity of Interstellar Comet 2I/Borisov by Optical and Near-infrared GROWTH, Apache Point, IRTF, ZTF, and Keck Observations*, AJ, 160, 1, 16 pp.
7. **Bolin, B.T.**, Morbidelli, A., and Walsh, K., 2018, *Size-dependent modification of Asteroid Family Yarkovsky V-shapes*, A&A, V. 611, A82, 27 pp.
6. **Bolin, B.T.**, Walsh, K., Morbidelli, A., and Delbo', M., 2018, *Initial velocity V-shapes of Young Asteroid Families in the Main Belt*, MNRAS, V. 473, p. 3949-3968
5. Jedicke, R., **Bolin, B.T.**, Bottke, W., Monique, C. et al., 2018, *Earth's Minimoons: Opportunities for Science and Technology.*, FrASS, V. 5, 13 pp.
4. **Bolin, B.T.**, Weaver, H.A., Fernandez, Y.R., Lisse, C.M. et al., 2018, *APO Time Resolved Color Photometry of Highly-Elongated Interstellar Object 1I/'Oumuamua*, ApJL, V. 852, 10 pp.
3. **Bolin, B.T.**, Delbo', M., Morbidelli, A. and Walsh, K., 2017, *Yarkovsky V-shape identification of asteroid families*, Icarus, V. 282, p. 290-312
2. Jedicke, R., **Bolin, B.T.**, Granvik, M. and Beshore, E., 2016, *A fast method for quantifying observational selection effects in asteroid surveys*, Icarus, V. 266, p. 173-188
1. **Bolin, B.T.**, Jedicke, R., Granvik, M. et al., 2014, *Detecting Earth's temporarily-captured natural satellites-Minimoons*, Icarus, V. 241, p. 280-297

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## OTHER CO-AUTHORED PUBLICATIONS

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32. Levison, H.F., Marchi, S., Noll, K.S., Spencer, J.R. & 118 coauthors including **Bolin, B.T.** 2024, *The Discovery of a Contact-Binary Satellite of the Asteroid (152830) Dinkinesh by the Lucy Mission*, submitted to Nature.
31. Perley, D.A., Ho, A.Y.Q., Fausnaugh, M., Lamb, G.P. & 33 coauthors including **Bolin, B.T.** 2024, *AT 2019pim: A Luminous Orphan Afterglow from a Moderately Relativistic Outflow*, submitted to MNRAS journals.
30. Kelley, M.S.P., Protopapa, S., Moulane, Y., Heinze, A.N. & 11 coauthors including **Bolin, B.T.** 2023, *A Search for Water Ice in an Outburst of Comet 243P/NEAT*, submitted to AAS journals.
29. Deleon, A.P., Marshall, S.E., Becker, T.M., Pravec, P. & 11 coauthors including **Bolin, B.T.** 2023, *Characterization of Interior, Near-Earth, Binary Asteroid (163693) Atira*, submitted to AAS journals.
28. Sharma, K.<sup>†</sup>, Kumar, H., Choudhary, H., Bhalerao, V. & 6 coauthors including **Bolin, B.T.** 2023, *Astreaks: A novel method for astrometry of NEOs*, MNRAS, 524, 2, p. 2651-2660.
27. Farnocchia, D., Reddy, V., Bauer, J. M., Warner, E. M. & 87 coauthors including **Bolin, B.T.** 2023, *The second International Asteroid Warning Network Timing Campaign: 2005 LW3*, PSJ, 4, 203.

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26. Nesvorny, D., Diunno, R., Bottke, W.F., Jedicke, R. & 10 coauthors including **Bolin, B.T.** 2023, *NEO-MOD: A New Orbital Distribution Model for Near Earth Objects*, AJ, 166, 55.
25. Lin, Z.-Y., Cheng, C.-C., Chang, C.-K., Tseng, W.-L. & 7 coauthors including **Bolin, B.T.** 2023, *Asteroid phase function parameters and taxonomic constraints from the Zwicky Transient Facility*, AAS journals, under review.
24. Schwamb, M.E., Jones, R.L., Yoachim, P., Volk, K. & 30 coauthors including **Bolin, B.T.** 2023, *Tuning the Legacy Survey of Space and Time (LSST) Observing Strategy for Solar System Science*, ApJS, 266, 2, 22, 68 pp.
23. Farnocchia, D., Reddy, V., Bauer, J.M., Warner, E.M. & 68 coauthors including **Bolin, B.T.** 2022, *International Asteroid Warning Network Timing Campaign: 2019 XS*, PSJ, 3, 7, 156 pp.
22. Chang, C.-K., Yeh, T.-S., Tan, H.-J., Ip, W.-H. & 10 coauthors including **Bolin, B.T.** 2022, *The Large Superfast Rotators Discovered by the Zwicky Transient Facility*, ApJL, 932, 1, L5.
21. Lindberg, C.W.<sup>†</sup>, Huppenkothen, D., Jones, R.L., Jones, R.L., **Bolin, B.T.**, et al., 2021, *Characterizing Sparse Asteroid Light Curves with Gaussian Processes*, AJ, 163, 1, 29 pp.
20. Anand, S., Coughlin, M.W., Kasliwal, M.M., Bulla, M. & 43 coauthors including **Bolin, B.T.**, 2020, *Optical follow-up of the neutron star-black hole mergers S200105ae and S200115j*, Nature Astronomy, Advanced Online Publication.
19. Morbidelli, A., Delbo, M., Granvik, M., Bottke, W. F. & 4 coauthors including **Bolin, B.T.** 2020, *Debiased albedo distribution for Near Earth Objects*, Icarus, 340, 1, 113631.
18. Ye, Q., Kelly, M.S.P., **Bolin, B.T.**, Bodewits, Dennis et al., 2019, *Pre-discovery Activity of New Interstellar Comet 2I/Borisov beyond 5 au*, AJ, 159, 9 pp.
17. Ye, Q., Masci, F.J., Lin, H.W., **Bolin, B.T.** et al., 2019, *Towards Efficient Detection of Small Near-Earth Asteroids Using the Zwicky Transient Facility (ZTF)*, PASP, 131, 078002.
16. Graham, M.J., Kulkarni, S.R., Bellm, E.C., Adams, S.M. & 112 coauthors including **Bolin, B.T.**, 2019, *The Zwicky Transient Facility: Science Objectives*, PASP, 131, 078001.
15. Ye, Q., Kelly, M.S.P., Bodewits, D., **Bolin, B.T.** et al., 2019, *Multiple Outbursts of Asteroid (6478) Gault*, ApJL, V. 874, 8 pp.
14. Whidden, P.J., Kalmbach, B.<sup>†</sup>, Connolly, A.J., Jones, R.L. & 10 coauthors including **Bolin, B.T.**, 2019, *Fast algorithms for slow moving asteroids: constraints on the distribution of Kuiper Belt Objects*, AJ, V. 157, 15 pp.
13. Bellm, E.C., Kulkarni, S.R., Graham, M.J., Dekany, R. & 111 coauthors including **Bolin, B.T.**, 2019, *The Zwicky Transient Facility: System Overview, Performance, and First Results*, PASP, V. 131, 19 pp.
12. Granvik, M., Morbidelli, A., Jedicke, R., **Bolin, B.T.** et al., 2018, *Debiased orbit and absolute-magnitude distributions for near-Earth objects*, Icarus, V. 312, p. 181-207
11. Hanuš, J., Delbo', M., Alí-Lagoa, V., **Bolin, B.T.** et al., 2018, *Spin states of asteroids in the Eos collisional family*, Icarus, V. 299, p. 84-96
10. Delbo', M., Walsh, K., **Bolin, B.T.**, Avdellidou, C. et al., 2017, *Identification of a primordial asteroid family constrains the original planetesimal population*, Science, V. 357, 3 pp.
9. Moreno, F., Pozuelos, F. J., Novaković, B., Licandro, J. & 19 coauthors including **Bolin, B.T.**, 2018, *The Splitting of Double-component Active Asteroid P/2016 J1 (PANSTARRS)*, ApJL, V. 837, 6 pp.

8. Vokrouhlický, D., Pravec, P., Durech, J., **Bolin, B.T.** et al., 2018, *The young Datura asteroid family. Spins, shapes, and population estimate*, A&A, V. 598, 19 pp.
7. Hanuš, J., Delbo', M., Vokrouhlický, Pravec, P. & 14 coauthors including **Bolin, B.T.**, 2016, *Near-Earth asteroid (3200) Phaethon: Characterization of its orbit, spin state, and thermophysical parameters*, A&A, V. 592, 15 pp.
6. Granvik, M., Morbidelli, A., Jedicke, R., **Bolin, B.T.** et al., 2016 *Super-catastrophic disruption of asteroids at small perihelion distances*, Nature, V. 530, Issue 7590, p. 303-306
5. Vereš, P., Jedicke, R., Fitzsimmons, A., Denneau, L. & 13 coauthors including **Bolin, B.T.**, 2015, *Absolute magnitudes and slope parameters for 250,000 asteroids observed by Pan-STARRS PS1 - Preliminary results*, Icarus, V. 261, p. 34-47
4. Hsieh, H.H., Denneau, L., Wainscoat, R., Schörghofer, N. & 16 coauthors including **Bolin, B.T.**, 2015, *The main-belt comets: The Pan-STARRS1 perspective*, Icarus, V. 248, p. 289-312
3. Hsieh, H.H., Olivier, H., Novaković, R., & 14 coauthors including **Bolin, B.T.**, 2015, *Sublimation-Driven Activity in Main-Belt Comet 313p/Gibbs*, ApJL, V. 800, 7 pp.
2. Denneau, L., Jedicke, R., Grav, T., Granvik, M. & 40 coauthors including **Bolin, B.T.**, 2013, *The Pan-STARRS Moving Object Processing System*, PASP, V. 125, 39 pp.
1. Granvik, M., Jedicke, R., **Bolin, B.T.**, Monique, C. et al., 2013, *Earth's Temporarily-Captured Natural Satellites - The First Step towards Utilization of Asteroid Resources*, Asteroids: Prospective Energy and Material Resources, p. 289-312

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## SELECTED NON-REFERRED PUBLICATIONS

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6. **Bolin, B.T.**, Masci, F.J., Ip, W.-H., and Helou, G. et al. 2022, *Comet C/2022 E3 (ZTF)*, Minor Planet Electronic Circular, 2022-F13.
5. **Bolin, B.T.**, Bhalerao, V., Copperwheat, C.M., and Deshmukh, K.P. et al. 2020, *2020 QG*, Minor Planet Electronic Circular, 2020-Q51.
4. **Bolin, B.T.**, Bodewits, D., Lisse, C.M., and Fernandez, Y.R. et al. 2020, *Possible fragmentation of interstellar comet 2I/Borisov*, The Astronomer's Telegram, 13613.
3. **Bolin, B.T.**, Masci, F.J., Ye, Q.-Z., and Pettarin, E. et al. 2020, *2020 AV<sub>2</sub>*, Minor Planet Electronic Circular, 2020-A99.
2. Hill, R.E., **Bolin, B.T.**, Kleyana, J., and Denneau, L. et al. 2013, *Comet P/2013 R3 (Catalina-Panstarrs)*, Central Bureau Electronic Telegrams, 3658.
1. **Bolin, B.T.**, Denneau, L., Micheli, M., and Wainscoat, R. et al. 2013, *Comet P/2013 P5 (Panstarrs)*, Central Bureau Electronic Telegrams, 3639.

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## LANGUAGES

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English: primary language

French: proficient (reading, writing), intermediate (speaking, listening)

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## REFERENCES

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