

CURRICULUM VITAE  
– BRYCE THEODORE BOLIN –

California Institute of Technology  
Division of Physics, Mathematics and Astronomy  
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Pasadena, CA 91125

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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: Marco Delbo (marco.delbo@oca.edu) and Alessandro Morbidelli (morby@oca.eu)*

**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*

Dynamics of Solar System small body populations, asteroids and comets  
Formation of planetesimals and their implication in planet formation  
Survey observations and discovery of near-Earth objects and activated asteroids  
Analysis of large datasets for determining the physical properties of asteroids  
Measuring the physical properties of asteroids and comets from optical and near-infrared observations

### *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

2019 – 2021 Postdoctoral Scholar in Astronomy, Div. of Phy., Math. and Astro., Cal. Inst. of Tech.  
2018 – 2019 Senior Research Scientist, B612 Asteroid Institute, B612 Foundation  
2018 – 2019 Postdoctoral Fellow, DIRAC Institute, Dept. of Astronomy, Univ. of Washington  
2014 – 2018 Doctorant en astrophysique, Université Côte d’Azur  
2012 – 2014 NEO Research Analyst, Institute for Astronomy, Univ. of Hawai’i at Mānoa

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## GRANTS, AWARDS AND HONORS

2021 - **Asteroid 2001 CL<sub>22</sub> named Bolin**

2021 - **JPL/Caltech Presidents and Directors Research and Development Fund**, co-I (\$400,000)  
“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** (€15,000/yr, 3 yr)

## ADVISING & TEACHING

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### *Advising and Mentoring*

Students co-supervised:

- Kritti Sharma**, undergraduate at the Indian Institute of Technology, Bombay with Prof. Varun Bhalerao on observations of near-Earth asteroids with the Zwicky Transient Facility, 2020 - present.
- Josiah Purdum**, master’s student at San Diego State University with Prof. Robert Quimby on observations of active asteroid Gault, 2019 - present.
- Kunal Deshmukh**, undergraduate at the Indian Institute of Technology, Bombay with Prof. Varun Bhalerao on observations of near-Earth asteroids with the Zwicky Transient Facility, 2019 - present.
- Christina Lindberg**, postgraduate at the University of Washington, with Dr. Daniela Huppenkothen on Gaussian processes analysis of asteroid lightcurves, 2018 - present. 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*

- PHPH556**, Guest Lecturer, *Introduction to Astrophysics*, Undergraduate and Graduate Level Course, Department of Physics, Indian Institute of Technology Bombay, Spring 2021
- PHY 2004**, Course Instructor, *Applied Physics*, Undergraduate Level Course, Department of Natural Sciences, Santa Fe College, Fall 2011
- PHY 2004L**, Laboratory Instructor, *Applied Physics Lab*, Undergraduate Level Course, Department of Natural Sciences, Santa Fe College, Fall 2011
- ESC 1000**, Course Instructor, *Earth and Space Science*, Undergraduate Level Course, Department of Natural Sciences, Santa Fe College, Summer 2011
- 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 - present)  
 LSST Solar System Science Collaboration Inner Solar System Working Group Lead (2019 - 2021)

### *Professional Service*

- 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 (2016 - present)  
*HST* General Observer mid-Cycle and Director's Discretionary time reviewer (2019 - present)  
 Grant reviewer for the Austrian Science Fund (2019 - present)  
 Grant reviewer for the National Research, Development and Innovation Office, Hungary (2020)  
 Grant reviewer for for the National Science Center, Poland (2021)  
 Gemini Fast Turnaround program reviewer (2019 - present)

### *Outreach*

#### Public Outreach Volunteer:

Conference for Undergraduate Women in Physics (January 2019)  
 B612 Foundation Quarterly Webinar (May 2018)  
 La Nuit Coupoles Ouvertes (October 2017)  
 Asteroid Day Luxembourg (June 2017)  
 La Nuit Coupoles Ouvertes (June 2015)  
 Honolulu Zoo Educational Outreach (July 2013)  
 Institute for Astronomy Open House (April 2013)  
 Institute for Astronomy Comet Pan-STARRS (March 2013)  
 Holy Nativity School (February 2013)  
 Bernice Pauahi Bishop Museum (January 2013)

#### Event Volunteer:

20th Meeting of the NASA Small Bodies Assessment Group (January 2019)  
 Division of Planetary Sciences (October 2017)  
 Division of Planetary Sciences (October 2016)  
 Division of Planetary Sciences (October 2013)  
 Division of Planetary Sciences (October 2012)  
 Volunteer Judge, Hawai'i State Science Fair (April 2012)  
 The Next-Generation Suborbital Researchers Conference (February 2011)

## **SELECTED PRESS RELEASES**

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5. "Comet Makes a Pit Stop Near Jupiter's Asteroids", NASA News Releases, February 25, 2021, [Link].
4. "Tiny Asteroid Buzzes by Earth the Closest Flyby on Record ", NASA News Releases, August 18, 2020, [Link].
3. "It Came From Outside Our Solar System and Now Its Breaking Up", The New York Times, April 7, 2020, [Link].
2. "First Asteroid Found Inside Orbit of Venus", Caltech News, January 15, 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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1. "Prospecting for the Solar System's Original Planetesimals", 20th Meeting of the NASA Small Bodies Assessment Group, Lunar and Planetary Institute, January 29-31, 2019

## **INVITED COLLOQUIA & SEMINARS**

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17. Observatoire de la Côte d'Azur, Planetary Science 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, Planetary Science 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, Planetary Science 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, Planetary Science Seminar, Nice, France, May 21, 2015
1. Observatoire de la Côte d'Azur, Planetary Science Seminar, Nice, France, October 14, 2014

## CONTRIBUTED TALKS

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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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11. Lisse, C.M., **Bolin, B.T.**, Fernandez, Y.R., Holt, T.R. et al., 2018, *First VISNIR Photometric Images of Active Transitioning Centaur P/2019 LD2(ATLAS) From Spitzer, Hubble, & GROWTH*, American Astronomical Society, DPS meeting 52, id.404.03
10. **Bolin, B.T.**, Lu, E., Loucks, M., Carrico, J. et al., 2018, *Impact Probability Evolution of Virtual Impacting Asteroids*, American Astronomical Society, AAS meeting 233, id.263.02
9. Chapman, C.R., **Bolin, B.T.**, Lu, E., Loucks, M. et al., 2018, *Impact Probability Evolution of Virtual Impacting Asteroids Observed by the Large Synoptic Survey Telescope*, American Astronomical Society, DPS meeting 50, id.310.08

8. **Bolin, B.T.**, Greenstreet, S., Jones, R.L., Becker, A.C. et al., 2018, *Multiwavelength phase curves for asteroid families in the SDSS Moving Object Catalogue*, A Century of Asteroid Families, IAU Focus Meeting
7. Jedicke, R., Boe, B., **Bolin, B.T.**, Bottke, W. et al., 2017, *Impact Probability Evolution of Virtual Impacting Asteroids Observed by the Large Synoptic Survey Telescope*, American Astronomical Society, DPS meeting 49, id.112.01
6. Vereš, P., Jedicke, R., Fitzsimmons, A., Denneau, L. & 4 coauthors including **Bolin, B.T.**, 2015, *Absolute magnitudes and slope parameters for 250,000 asteroids observed by Pan-STARRS1*, American Astronomical Society, DPS meeting 47, id.308.03
5. **Bolin, B.T.**, Delbo', M., Alí-Lagoa, V., Morbidelli, A. et al., 2015, *A new method to identify asteroid families older than 2 Ga*, IAU General Assembly, Meeting 29, id.2257781
4. Wainscoat, R.J., Vereš, P., **Bolin, B.T.**, Denneau, L. et al., 2013, *The Pan-STARRS search for Near Earth Objects: recent progress and future plans*, American Astronomical Society, DPS meeting 45, id.401.02
3. Bratcher, A., Colwell, J.E., **Bolin, B.T.**, 2012, *Analysis of a Triple Star System Occulted By Saturns Rings*, American Astronomical Society, DPS meeting 44, id.414.13
2. **Bolin, B.T.**, Jedicke, R., Granvik, M., Wainscoat, R., 2012, *Detecting Earth's Moons*, Asteroids, Comets, Meteors 2012, Proceedings of the conference held May 16-20, 2012 in Niigata, Japan. LPI Contribution No. 1667, id.6359
1. **Bolin, B.T.**, Colwell, J.E., 2011, *Cassini UVIS Observations of Saturn's Faint, Narrow Ringlets*, EPSC-DPS Joint Meeting 2011, held 2-7 October 2011 in Nantes, France.

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## OBSERVING EXPERIENCE

0.9-meter *Spitzer Space Telescope* (IRAC): 4.8 h  
 2.2-meter University of Hawai'i (Tek 2048), Maunakea, HI: 33 nights  
 2.4-meter *Hubble Space telescope* (WFC3): 9 orbits  
 3.5-meter Astrophysical Research Consortium (ARTIC, NICFPS, DIS), Sunspot, NM: 14 nights  
 3.6-meter Canada France Hawai'i Telescope (MegaCam), Maunakea, HI: 40 hours queue time  
 5.1-meter Hale Telescope (WASP, CHIMERA, DBSP, TripleSpec), Palomar, CA: 6 nights  
 8.1-meter Gemini North (GNIRS), Maunakea, HI: 6.5 h / 7.5 h, band 1/band 2,3 queue time  
 8.1-meter Gemini South (GMOS-S, Flamings-2), Cerro Pachón, Chile: 4.8 h, 6 h, band 1/band 2,3 queue time  
 10.0-meter Keck I (LRIS), Maunakea, HI: 0.5 nights

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## FIRST AUTHOR PEER-REVIEWED PUBLICATIONS

**Publications:** 35 ( **first author:** 10 | **second author:** 4 | **co-author:** 21 | **citations:** 1632 | **h-index:** 19 )

10. **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.
9. Ip, W.-H.\*, **Bolin, B.T.\***, Masci, F. J., Ye, Q. et al., 2020, *A kilometer-scale asteroid inside Venus's orbit*, Science, under revision.
8. **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.

7. **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.
6. **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.
5. **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.
4. **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
3. **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.
2. **Bolin, B.T.**, Delbo', M., Morbidelli, A. and Walsh, K., 2017, *Yarkovsky V-shape identification of asteroid families*, Icarus, V. 282, p. 290-312
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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#### SECOND AUTHOR PEER-REVIEWED PUBLICATIONS

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4. 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, in press.
3. 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
2. 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.
1. 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

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#### STUDENT PEER-REVIEWED PUBLICATIONS

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2. 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, submitted.
1. 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.

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#### CO-AUTHOR PEER-REVIEWED PUBLICATIONS

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\*These authors contributed equally to this work.

<sup>†</sup>Student advisee.

19. 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.
18. 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.
17. 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.
16. 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.
15. 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.
14. 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.
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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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.**, Kleyna, J., and Denneau, L. et al. 2020, *Comet P/2013 R3 (Catalina-Panstarrs)*, Central Bureau Electronic Telegrams, 3658.
1. **Bolin, B.T.**, Denneau, L., Micheli, M., and Wainscoat, R. et al. 2020, *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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Wing-Huen Ip, <i>Professor</i>	National Central University, Taiwan	wingip@astro.ncu.edu.tw
Alessandro Morbidelli, <i>Astronomer</i>	Observatoire de la Côte d'Azur, Fr	morby@oca.eu
Kevin Walsh, <i>Senior Research Scientist</i>	Southwest Research Institute, USA	kwalsh@boulder.swri.edu
Robert Jedicke, <i>Specialist</i>	Institute for Astronomy, USA	jedicke@hawaii.edu