

Sarah Greenstreet

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EDUCATION

Ph.D., Astronomy, University of British Columbia, 2011 – 2015
M.S., Astronomy, University of British Columbia, 2009 – 2011
B.S., Physics, Western Washington University, 2003 – 2007

PROFESSIONAL APPOINTMENTS

National Optical-Infrared Astronomy Research Laboratory, Tenure-track Assistant Astronomer, Sept 2023 – present

University of Washington, Astronomy Department, Affiliate Assistant Professor, Sept 2023 – present

University of Washington, Astronomy Department, Research Scientist, 2020 – 2023

B612 Asteroid Institute, Senior Researcher, 2017 – 2021

University of Washington, Astronomy Department, Postdoctoral Scholar, 2017 – 2020

Las Cumbres Observatory, Postdoctoral Fellow, 2015 – 2017

University of California, Santa Barbara, Physics Department, Postdoctoral Scholar, 2015 – 2017

REFEREED PUBLICATIONS

Published Journal Papers:

- 2023 Moskowitz, N., et al. (including **Greenstreet, S.**), Photometry of the Didymos system across the DART impact apparition, *ArXiv*, 2311.01971.
- 2023 Hui, M.-T., et al. (including **Greenstreet, S.**), Splitting of Long-Period Comet C/2018 F4 (PANSTARRS), *The Astronomical Journal*, 166, 47.
- 2023 Schwamb, M., et al. (including **Greenstreet, S.**), Tuning the Legacy Survey of Space and Time (LSST) Observing Strategy for Solar System Science, *The Astrophysical Journal Supplements*, 266, 22.
- 2023 Thomas, C. A., et al. (including **Greenstreet, S.**), Orbital Period Change of Dimorphos Due to the DART Kinetic Impact, *Nature*, 616, 448-451.
- 2022 Berres, A., **Greenstreet, S.**, et al., Orb_It: A Validation Packages for Orbit Integrators, *RNAAS*, 6, 174.
- 2022 Lister, T., et al. (including **Greenstreet, S.**), The LCO Outbursting Objects Key Project: Overview and Year 1 Status, 2022, *The Planetary Science Journal*, 3, 173.
- 2022 Kelley, M. S. P., et al. (including **Greenstreet, S.**), A LOOK at outbursts of comet C/2014 UN₂₇₁ (Bernardinelli-Bernstein) near 20 au, 2022, *The Astrophysical Journal Letters*, 933, L44.
- 2022 Lee, H.-J., et al. (including **Greenstreet, S.**), Refinement of the convex shape model and tumbling spin state of (99942) Apophis using the 2020-2021 apparition data, 2022, *Astronomy & Astrophysics*, 661, L3.

- 2021 Mao, X., McKinnon, W. B., Singer, K. N., Keane, J. T., Beyer, R. A., **Greenstreet, S.**, et al., Collisions of Small Kuiper Belt Objects with (486958) Arrokoth: Implications for Its Spin Evolution and Bulk Density, 2021, *Journal of Geophysical Research: Planets*, 126, 12, e06961.
- 2021 Hsieh, H. H., et al. (including **Greenstreet, S.**), Physical Characterization of Main-belt Comet (248370) 2005 QN173, 2021, *The Astrophysical Journal Letters*, 922, L9-L18.
- 2021 Schwamb, M., Juric, M., Bolin, B. T., Dones, L., **Greenstreet, S.**, et al., Year 1 of the Legacy Survey of Space and Time (LSST): Recommendations for Template Production to Enable Solar System Small Body Transient and Time Domain Science, 2021, *Research Notes of the AAS*, 5, 6, 143.
- 2021 Alexandersen, M., **Greenstreet, S.**, et al., OSSOS. XXIII. 2013 VZ70 and the Temporary Co-orbitals of the Giant Planets, 2021, *The Planetary Science Journal*, 2, 5, 212-222.
- 2021 Lister, T., Gomez, E., Chatelain, J., **Greenstreet, S.**, et al., NEOExchange – an online portal for NEO and Solar System Science, 2021, *Icarus*, 364, 114387.
- 2021 Abedin, A., Kavelaars, J. J., **Greenstreet, S.**, et al., OSSOS. XXI. Collision Probabilities in the Edgeworth-Kuiper Belt, 2021, *The Astronomical Journal*, 161, 195.
- 2020 **Greenstreet, S.**, Gladman, B., Ngo, H., Transient Jupiter Co-orbitals from Solar System Sources, 2020, *The Astronomical Journal*, 160:144.
- 2020 **Greenstreet, S.**, Lu, E., Loucks, M., Carrico, J., Kichkaylo, T., Juric, M., Required deflection impulses as a function of time before impact for Earth-impacting asteroids, 2020, *Icarus*, 347, 113792.
- 2020 **Greenstreet, S.**, Orbital Dynamics of 2020 AV2: the First Vatira Asteroid, 2020, *Monthly Notices of the Royal Astronomical Society*, 493, L129-L131.
- 2019 Chen, Y.-T., et al. (including **Greenstreet, S.**), OSSOS. XVIII. Constraining Migration Models with the 2:1 Resonance using the Outer Solar System Origins Survey, 2019, *The Astronomical Journal*, 158, 214-230.
- 2019 Singer, K. N., McKinnon, W. B., Gladman, B., **Greenstreet, S.**, et al., Impact Craters on Pluto and Charon Indicate A Deficit of Small Kuiper Belt Objects, 2019, *Science*, 363, 6430, 955-959.
- 2019 **Greenstreet, S.**, Farnocchia, D., Lister, T., Measuring the Yarkovsky Effect with Las Cumbres Observatory, 2019, *Icarus*, 321, 564-571.
- 2019 **Greenstreet, S.**, Gladman, B., McKinnon, W. B., Kavelaars, J. J., Singer, K. N., Crater Density Predictions for New Horizons flyby target 2014 MU69, 2019, *The Astrophysical Journal Letters*, 872, L5-L10.
- 2018 Frantseva, K., et al. (including **Greenstreet, S.**), Delivery of Organics to Mars through Asteroid and Comet Impacts, 2018, *Icarus*, 309, 125-133.
- 2018 Volk, K., et al. (including **Greenstreet, S.**), OSSOS. IX. Two Objects in Neptune's 9:1 Resonance – Implications for resonance sticking in the scattering population, 2018, *The Astronomical Journal*, 155, 260.
- 2018 Bannister, M., et al. (including **Greenstreet, S.**), OSSOS. VII. 800+ Trans-Neptunian Objects – The Complete Data Release, 2018, *The Astrophysical Journal Supplement Series*, 236, 18-36.
- 2016 **Greenstreet, S.**, et al., Corrigendum to: Impact and Cratering Rates onto Pluto, 2015, *Icarus*, 274, 366-367.
- 2015 **Greenstreet, S.**, Gladman, B., McKinnon, W. B., Impact and Cratering Rates onto Pluto, 2015, *Icarus*, 258, 267-288.

- 2015 Lawler, S., **Greenstreet, S.**, Gladman, B., Fomalhaut B as a Dust Cloud: Frequent Collisions within the Fomalhaut Disk, 2015, *The Astrophysical Journal Letters*, 802, L20-L24.
- 2013 Alexandersen, M., Gladman, B., **Greenstreet, S.**, et al., A Uranian Trojan and the Frequency of Temporary Giant-Planet Co-Orbitals, 2013, *Science*, 341, 6149, 994-997.
- 2013 **Greenstreet, S.**, Gladman, B., High-inclination Atens are indeed rare, 2013, *The Astrophysical Journal Letters*, 767, L18-L22.
- 2012 **Greenstreet, S.**, Gladman, B., Ngo, H., Granvik, M., Larson, S., Production of near-Earth asteroids on retrograde orbits, 2012, *The Astrophysical Journal Letters*, 749, L39-L43.
- 2012 **Greenstreet, S.**, Ngo, H., Gladman, B., The orbital distribution of near-Earth objects inside Earth's orbit, 2012, *Icarus*, 217, 355-366.

Book Chapters:

- 2021 Singer, K., **Greenstreet, S.**, Schenk, P. M., Robbins, S. J., and Bray, V. J. (2021). Pluto and Charon craters and terrain age estimates, in *The Pluto system*. edited by S. A. Stern, L. A. Young, J. M. Moore, W. M. Grundy, and R. P. Binzel, University of Arizona Press, Tucson.

Magazine Articles:

- 2021 **Greenstreet, S.**, Asteroids in the Inner Solar System, 2021, *Physics Today*, 74, 7, 42.

Submitted Papers:

- 2023 **Greenstreet, S.**, Gladman, B., Juric, M., Jupiter's Metastable Companions, *ApJL*.

Manuscripts in Preparation:

- 2023 **Greenstreet, S.**, Gladman, B., Petit, J.-M., Abedin, A., Kavelaars, JJ, Re-Calculation of Impact and Cratering Rates onto Pluto, Charon, and Arrokoth and Their Younger Surface Ages.

NON-REFEREED PUBLICATIONS

- 2021 Mainzer, A., et al. (including **Greenstreet, S.**), The Future of Planetary Defense in the Era of Advanced Surveys, 2021, *Planetary Science and Astrobiology Decadal Survey 2023-2032*, 53, 4, 259.
- 2021 Vera C. Rubin Observatory LSST Solar System Science Collaboration, et al. (including **Greenstreet, S.**), The Scientific Impact of the Vera C. Rubin Observatory's Legacy Survey of Space and Time (LSST) for Solar System Science, 2021, *Planetary Science and Astrobiology Decadal Survey 2023-2032*, 53, 4, 236.
- 2021 Schenk, Paul, et al. (including **Greenstreet, S.**), The Chronology Problem in the Outer Solar System: Constraining the "WHEN" of Major Dynamical and Geological Events, 2021, *Planetary Science and Astrobiology Decadal Survey 2023-2032*, 53, 4, 147.

Conference Participation:

- 2023 **Greenstreet, S.**, Gladman, B., Petit, J.-M., Abedin, A., Kavelaars, JJ, "Re-Calculation of Impact and Cratering Rates onto Pluto, Charon, and Arrokoth and Their Younger Surface Ages" talk presented at the Division of Planetary Sciences Conference, San Antonio, TX
- 2023 **Greenstreet, S.**, Gladman, B., Juric, M., "Secure Identification of Metastable Jovian Co-orbitals" poster presented at the Asteroids, Comets, & Meteors Conference, Flagstaff, AZ

- 2022 **Greenstreet, S.**, Gladman, B., Juric, M., “Jupiter Trojan Temporary Interlopers” iPoster presented at the Division for Planetary Sciences Conference (virtual)
- 2021 **Greenstreet, S.**, Lu, E., Juric, M., Moeyens, J., “The Asteroid Discovery, Analysis, and Mapping (ADAM) platform” iPoster presented at the Division for Planetary Sciences Conference (virtual)
- 2020 **Greenstreet, S.**, Gladman, B., “Centaur and Jovian Co-orbitals with High Inclinations” poster presented at the Division for Planetary Sciences Conference (virtual)
- 2019 **Greenstreet, S.**, Loucks, M., Carrico, J., Lu, E., Kichkaylo, T., “Required deflection impulses as a function of time before impact for Earth-impacting asteroids” poster presented at the Planetary Defense Conference in College Park, MD
- 2019 **Greenstreet, S.**, Loucks, M., Carrico, J., Lu, E., Kichkaylo, T., “Required deflection impulses as a function of time before impact for Earth-impacting asteroids” iPoster presented at the American Astronomical Society Meeting in Seattle, WA
- 2018 **Greenstreet, S.**, Ngo, H., Gladman, B., “Near-Earth Asteroids on Retrograde Orbits” talk presented at the NWxSW Astronomy Meeting in Vancouver, B. C., Canada
- 2018 **Greenstreet, S.**, Ngo, H., Gladman, B., “A main-belt source for retrograde jovian co-orbital asteroids” talk presented at the Division for Planetary Sciences Conference in Knoxville, TN
- 2017 **Greenstreet, S.**, Seale, S., Rivera, J., Skinner, R., “Las Cumbres Observatory Partners with Local Museums in “Experience the Eclipse” Community Program”, poster presented at the Division for Planetary Sciences Conference in Provo, UT
- 2017 **Greenstreet, S.**, Farnocchia, D., Lister, T., “Measuring the Yarkovsky effect with Las Cumbres Observatory” poster presented at the Division for Planetary Sciences Conference in Provo, UT
- 2016 **Greenstreet, S.**, Lister, T., Gomez, “Preparing for LSST with the LCO NEO Follow-up Network” talk presented at the Division for Planetary Sciences Conference in Pasadena, CA
- 2016 **Greenstreet, S.**, Lister, T., Gomez, “Preparing for LSST with the LCO NEO Follow-up Network” talk presented at the Hotwiring the Transient Universe V Conference in Philadelphia, PA
- 2015 **Greenstreet, S.**, Lister, T., Gomez, E., Christensen, E., Larson, S., “Results from the LCOGT Near-Earth Object Follow-up Network” poster presented at the Division for Planetary Sciences Conference in National Harbor, MD
- 2014 **Greenstreet, S.**, Gladman, B., McKinnon, W. B., “Impact and Cratering History of the Pluto System” talk presented at the Division for Planetary Sciences Conference in Tucson, AZ
- 2013 **Greenstreet, S.**, Alexandersen, M., Gladman, B., Kavelaars, J.J., Petit, J.-M., Gwyn, S., “The First Known Uranian Trojan and the Frequency of Temporary Giant-Planet Co-Orbitals” presented at the Division for Planetary Sciences Conference, Denver, CO
- 2012 **Greenstreet, S.**, Gladman, B., “High-Inclination Atens ARE Rare” talk presented at the Division for Planetary Sciences Conference in Reno, NV
- 2012 **Greenstreet, S.**, Gladman, B., Ngo, H., Granvik, M., Larson, S., “Production of Near-Earth Asteroids & High-Strength Meteoroids on Cometary (?) Retrograde Orbits” talk presented at the Asteroids, Comets, and Meteors Conference in Niigata, Japan

- 2011 **Greenstreet, S.**, Ngo, H., Gladman, B., Granvik, M., Larson, S., “Production of Retrograde NEAs” talk presented at the Division for Planetary Sciences Conference in Nantes, France
- 2010 **Greenstreet, S.**, Ngo, H., Gladman, B., “The toasty Solar System: Inside Earth's orbit” poster presented at the Division for Planetary Sciences Conference in Pasadena, CA

Conference Proceedings (non-first-author):

34 presentations at 27 conferences (Oct 2011 - Oct 2023)

Minor Planet Electronic Circulars:

533 publications (May 2011 - Jan 2023)

Three MPEC examples:

- Vilagi, J. et al. (including **Greenstreet, S.**), Minor Planet Circ., No. 2021-N06 (2021), Obs/orb comets & A/ objects.
 Linder, T. et al. (including **Greenstreet, S.**), Minor Planet Circ., No. 2019-K35 (2019), 2019 KD.
 Kavelaars, J. J. et al. (including **Greenstreet, S.**), MPEC, No. 2011-K24 (2011), Discovery of 3 TNOs.

GRANT AWARDS & HONORS

- 2023 **Greenstreet, S.** (PI), Eggl, S., Juric, M. “Rubin Rocks: Enabling near-Earth asteroid science with LSST”, NSF Astronomy and Astrophysics, Grant Period: 2023 – 2026, Amount: \$408,862
- 2022 **Greenstreet, S.** (PI), Jurić, M., Gladman, B., “Searching for Transient Jovian Co-orbitals”, NASA Solar System Workings, Grant Period: 2022 – 2025, Amount: \$622,866
- 2022 **Greenstreet, S.** (PI) & Moeyens, J. (Co-I; UW graduate student), “Lowering the Barrier to Entry: Making Key Solar System Packages Easy to Install”, Preparing for Astrophysics with LSST, Heising-Simons Foundation /Las Cumbres Observatory, Grant Period: Jan 2022 – Aug 2022, Amount: \$19,876, Student: Aditi Chauhan (UW postbaccalaureate student)
- 2022 **Greenstreet, S.** (PI) & Moeyens, J. (Co-I; UW graduate student), “Lowering the Barrier for Making Discoveries with LSST: Verification and Validation for Key Solar System Orbit-fitting Software”, Preparing for Astrophysics with LSST, Heising-Simons Foundation /Las Cumbres Observatory, Grant Period: Jan 2022– Aug 2022, Amount Requested/Received: \$19,876/\$23,876, Student: Aidan Berres (UW postbacc)
- 2021 Hungaria asteroid (30535) 2001 OR₅ named “Sarahgreenstreet”

INVITED TALKS & SEMINARS

- 2023 “The Solar System’s Most Unusual Objects: The Dynamics of Inner-Venus and Retrograde Asteroids”, Washington State University
- 2023 “Interstellar Objects: Natural or Artificial?”, SETI with LSST Workshop, University of Washington
- 2022 “Making it easier to install, use, validate, and compare orbit-fitting software”, LSST Kickstarter Colloquium
- 2022 “Constraining Planet Formation Using Craters on Pluto and Charon”, University of Washington
- 2022 “The Solar System’s Most Unusual Objects: The Dynamics of Inner-Venus and Retrograde Asteroids”, Johns Hopkins University Applied Physics Laboratory
- 2022 “Transient Solar System Objects of Interest Expected From LSST”, National Optical-Infrared Astronomy Research Laboratory

- 2021 “Discovering Two New Asteroid Populations”, University of British Columbia
- 2019 “Retrograde Asteroids: Going the Wrong Way Around the Sun”, Portland State University
- 2018 “Near-Earth Asteroids on Retrograde Orbits”, opening speaker NWxSW Astronomy Meeting
- 2016 “Small body population celestial mechanics, impacts, and observations”, California Institute of Technology
- 2015 “Small body population celestial mechanics, impacts, and observations”, Jet Propulsion Laboratory
- 2015 “From NEOs to Craters on Pluto: A Look at Small Body Populations in the Solar System”, Southwest Research Institute
- 2013 “Impact Hazard of Near-Earth Asteroids”, Time and Life in the Universe – A Roundtable Initiative, Peter Wall Institute for Advanced Studies, University of British Columbia
- 2012 “Near-Earth Asteroid Population Model: Surprises in the Inner Solar System”, Western Washington Univ.

SELECTED MEDIA COVERAGE

- 2022 Drake, Nadia. “Inside the hunt for mysterious ‘twilight’ asteroids.” *National Geographic*, 28 Jul 2022; <https://www.nationalgeographic.co.uk/space/2022/07/inside-the-hunt-for-mysterious-twilight-asteroids>
- 2022 Japelj, Jure. “Galaxy Mapper Tracks Asteroids Closer to Home.” *Eos (Science News by AGU)*, 14 Jul 2022; <https://eos.org/articles/galaxy-mapper-tracks-asteroids-closer-to-home>
- 2020 Day, Charles. “An asteroid whose orbit is wholly within Venus’s.” *Physics Today*, 16 Apr 2020; <https://physicstoday.scitation.org/doi/10.1063/PT.6.1.20200416a/full/>
- 2019 Miller, Johanna L. “Craters on Pluto and Charon show that Kuiper belt collisions are rare.” *Physics Today*, 72, 5, 14 (2019); doi: 10.1063/PT.3.4196; <https://physicstoday.scitation.org/doi/10.1063/PT.3.4196>
- 2019 Kohler, Susanna. “Insights from MU69’s (Lack of) Craters.” *AAS Nova*, 18 Feb 2019; <https://aasnova.org/2019/02/18/insights-from-mu69s-lack-of-craters/>
- 2017 Greene, Debra. “Scientists Share Astronomy with Public in Unusual Way on South Coast”, KCLU, 10 Mar 2017; <https://www.kclu.org/term/astronomy-tap#stream/0>
- 2016 Byrd, Deborah. “Join Astronomers in Tracking Asteroids”, *EarthSky*, 30 June 2016; <https://earthsky.org/space/join-astronomers-in-tracking-asteroids/>
- 2016 Lewis, Danny. “Track These Space Rocks From Your Couch on Asteroid Day.” *Smithsonian Magazine*, 30 June 2016; <https://www.smithsonianmag.com/smart-news/help-scientists-track-space-rocks-asteroid-day>
- 2013 U. of British Columbia. “Astronomers Discover ‘Trojan’ Asteroid Sharing the Orbit of Uranus.” *SciTech Daily*, 30 Aug 2013; <https://scitechdaily.com/astronomers-discover-trojan-asteroid-sharing-orbit-uranus/>

PROJECT LEADERSHIP AND MEMBERSHIP

Rubin Observatory Community Science Team member (2023 – present)

University of Washington’s DiRAC Institute Leadership Team member (2023 – present)

LSSTC Catalyst Fellowship mentor program participant (2022 – present)

Rubin Observatory's Legacy Survey of Space and Time Solar System Science Collaboration Near-Earth Objects and Interstellar Objects Working Group Lead (2019 – present)

Outer Solar System Origins Survey (OSSOS) science team member (2016 – present)

New Horizons science team collaborator (2015 – present)

Near-Earth Space Surveillance project science team for Canada's microsatellite NEOSat (Near-Earth Object Surveillance Satellite) Co-Investigator (2013 – 2015)

Division of Planetary Sciences Member, American Astronomical Society (2010 – present)

PROFESSIONAL ACTIVITIES

Scientific Organizing Committee, Rubin Observatory's Project & Community Workshop (2023)

Panelist for NASA Planetary Mission Senior Review of OSIRIS-REx (APEX) extended mission to Apophis (2022)

External referee for The Canada-France-Hawaii Telescope Large Program proposal call (2022)

Organizer for Planetary Science Journal Club, University of Washington (Fall 2022 - present)

Scientific organizing committee, NWxSW Astronomy Meeting (2018)

Panel reviewer, external reviewer, and executive secretary for NASA proposal review panels (2013 – 2020)

Division of Planetary Sciences Meeting Session Chair

Referee for *The Astronomical Journal*, *Astronomy & Astrophysics*, *Celestial Mechanics and Dynamical Astronomy*, *Geophysical Research Letters*, *Icarus*, *Journal of Geophysical Research-Planets*, *Monthly Notices of the Royal Astronomical Society*, *New Astronomy*, *Planetary and Space Science*, *Planetary Science Journal*, *Remote Sensing*, and *Universe* (2015 - present)

Astronomy public talk series organizer, Las Cumbres Observatory (May 2016 – Nov 2017)

Science Seminar Chair/Organizer, Las Cumbres Observatory (Jan 2016 – Nov 2017)

Organizer for Planetary Journal Club, University of British Columbia (Fall 2012 – Summer 2015)

STUDENT PROJECTS & FUNDING

2021-2022

Project: “Lowering the Barrier for Making Discoveries with LSST: Verification and Validation for Key Solar System Orbit-fitting Software”

Student: Aidan Berres (UW postbaccalaureate student; UIUC graduate student)

Software: “Orb_It” integrator end-to-end testing framework (https://github.com/B612-Asteroid-Institute/orb_it)

Funding: Preparing for Astrophysics with LSST, Heising-Simons Foundation & Las Cumbres Observatory, PI: Sarah Greenstreet, Amount: \$23,876

Paper: Berres, A., Greenstreet, S., et al., Orb_It: A Validation Packages for Orbit Integrators, 2022, *RNAAS*, 6, 174

Conference presentation: Berres, A., Greenstreet, S., et al., *Astronomical Data Analysis Software and Systems 2022*

AAS Journal Author Series Interview: [YouTube link](#)

Project: “Lowering the Barrier to Entry: Making Key Solar System Packages Easy to Install”

Student: Aditi Chauhan (UW postbaccalaureate student)

Software: sbpy, Find_Orb, and OpenOrb orbit integrators conda-forge feedstock updates

Funding: Preparing for Astrophysics with LSST program sponsored by Heising-Simons Foundation & Las Cumbres Observatory, PI: Sarah Greenstreet, Amount: \$19,876

2020-2021

Student: Aidan Berres (UW postbaccalaureate student)

Software: “validate_findorb” end-to-end testing (https://github.com/B612-Asteroid-Institute/validate_findorb)

Funding: B612 Asteroid Institute

TEACHING EXPERIENCE

University of British Columbia

ASTR 102 – Introduction to Stars and Galaxies (Winter 2010)

ASTR 101 – Introduction to the Solar System (Fall 2009)

Western Washington University

PHYS 101 – Principles of Light (Fall 2005 – Spring 2007)

PHYS 233 – Waves and Optics (Fall 2005)

PHYS 116 – Principles of Physics II (Spring 2005)

PHYS 115 – Principles of Physics I (Winter 2005)

PHYS 133 – Electricity & Magnetism (Fall 2004)

TELESCOPE EXPERIENCE

Postdoctoral Fellow at LCO performing follow-up and characterization photometric and astrometric observations of NEO candidates and NASA ARM / NHATS / radar targets as well as astrometric measurements of candidate Yarkovsky drifters using LCO's global network of 1.0-m optical telescopes (2015 – 2017).

Greenstreet, S. et al., “Detection of the Yarkovsky effect for a selection of near-Earth asteroids.” Las Cumbres Observatory, 1.0-m telescope network, 2016B, 2017AB, 2018A, Target(s): selected NEAs for which the Yarkovsky effect may be detectable, Time requested/awarded: 120 hours (2016B), 100 hours (2017AB), 80 hours (2018A)

Greenstreet, S. et al., “Rotational properties of spacecraft target asteroid (162173) 1999 JU3.” Las Cumbres Observatory, 2.0-m Faulkes North & South, 2016A, Target(s): Hayabusa 2 sample return mission target asteroid Ryugu, Time requested/awarded: 48 hours

Co-Investigator with the Near-Earth Space Surveillance (NESS) project science team for Canada's microsatellite NEOSat (Near-Earth Object Surveillance Satellite) (2013 – 2015).

Greenstreet, S. et al., “Tracking of NEA Discoveries from Canada’s NEOSat Space Telescope.”, Canada-France-Hawaii Telescope, Megacam instrument, 2013B, Target(s): Follow-up of NEOSat discoveries of Aten and Atira NEOs, Time requested/awarded: 2 hours, Ranking 1/33

Completed independent studies course taken on operating the University of British Columbia Southern Observatory (UBCSO) remote telescope on Cerro Tololo, Chile and performing photometric and astrometric observations of main-belt asteroids (2012).

Palomar Mountain Observing Run #2503, 2010 Mar 18 – 2010 Mar 20, Telescope: P200, P.I.: Bob Jacobson, Lead Observer: Brett Gladman, Primary Instrument: LFC, Target: Saturnian irregular satellite discovery and tracking.

INVITED OUTREACH TALKS

- 2023 “Preparing for Rubin Observatory’s Legacy Survey of Space and Time (LSST) with the DiRAC Institute”, Seattle Astronomical Society, Oct 2023
- 2023 “Pluto’s Surprising History: Findings from NASA’s New Horizons Mission”, Conferences for Undergraduate Women in Physics, Physics Slam competition – **winner!**
- 2022 “Pluto, the Kuiper belt, and a possible new planet”, New Jersey Astronomical Society, Aug 2022
YouTube video: <https://www.youtube.com/watch?v=IxrMBtJFqR0>
- 2019 “Asteroids, Orbital Dynamics, and Craters on Pluto”, Woodland High School, Woodland, WA
- 2018 “Asteroids, Telescopes, and Craters on Pluto”, Woodland High School, Woodland, WA
- 2017 “The Outer Solar System: Pluto and Friends”, Cosmopolitan Club, Santa Barbara, CA
- 2017 “We are the First Generation to Explore the Solar System”, Astronomy on Tap Santa Barbara,
YouTube video: <https://www.youtube.com/watch?v=UKDK527LwzY&t=321s> (5:07 – 14:18)
- 2016 “The Outer Solar System: Pluto and Friends”, Astronomy on Tap Santa Barbara,
YouTube video: <https://www.youtube.com/watch?v=jOYCGw5HTUc> (5:35 – 42:35)
- 2016 “The Solar System's Spare Parts: Observing Asteroids & Comets” and “The Solar System's Spare Parts: Space Rocks”, Camp Cosmos, Las Cumbres Observatory
- 2016 “Pluto, the Kuiper Belt, and a Possible (new) 9th Planet”, Santa Barbara Astronomical Unit amateur astronomer monthly meeting
- 2014 “My Journey Toward Becoming an Astrophysicist”, AAUW-Bellingham High School Scholars Recognition Event, SPARK Museum of Electrical Invention
- 2014 “Asteroids, Dinosaurs, and Telescopes...Oh My!”, Henrietta Lacks Health and Bioscience HS

OUTREACH ACTIVITIES

- 2019 Participant in DiRAC Institute video for Asteroid Day
- 2016-2017 Speaker for Astronomy on Tap events
- 2016-2017 Organizer for astronomy public talks series, Las Cumbres Observatory
- 2016-2017 Volunteer for open houses, Las Cumbres Observatory
- 2016-2017 Volunteer for public observing events, Las Cumbres Observatory
- 2016-2017 Volunteer for student science nights & science fairs, Santa Barbara, CA
- 2016 Leader, speaker, activity organizer/developer, & coding/robotics instructor, Camp Cosmos, LCOGT
- 2016 Organized/executed public asteroid tracking observing program at LCOGT for Asteroid Day
- 2014 Speaker at American Association of University Women (AAUW) event, Bellingham, WA
- 2014 Speaker at Henrietta Lacks High School career symposium
- 2006-2007 Volunteer for public observing nights at Western Washington University

SELECTED SCIENCE COMMUNICATION

- 2021 **Greenstreet, S.** “Asteroid named for Asteroid Institute Senior Researcher.” 10 Aug 2021;
<https://b612foundation.org/asteroid-named-for-asteroid-institute-senior-researcher/>
- 2019 DiRAC Institute, University of Washington (featuring, **Greenstreet, S.**). “New Era of Cosmic Discovery.”, June 2019; <https://vimeo.com/346915212>

2015 **Greenstreet, S.** “ ‘Spooky’ NEO passes close to the Earth on Halloween.” 30 Oct 2015; <https://lco.global/news/spooky-neo-passes-close-to-the-earth-on-halloween/>

2015 **Greenstreet, S.** “LCOGT monitors a close-approaching NEO.” 5 Oct 2015; <https://lco.global/news/lcogt-monitors-a-close-approaching-neo/>

SOFTWARE DEVELOPMENT & TECHNICAL SKILLS

Programming abilities in Python, Fortran, C, Jupyter Notebooks, Google Compute Engine, MySQL, Django, & Selenium, including test-driven development

Beowulf cluster use for numerical integration (with SWIFT-RMVS4)

IRAF, Astrometrica, and Find_Orb for photometry and astrometry
GitHub version control system

OpenOrb asteroid orbit computation software & Find_Orb orbit determination software

Development of LCO’s NEOExchange online observing portal manager, scheduler, and analyzer

Software Engineer for Scalable Cyberinfrastructure to support Multi-Messenger Astrophysics (SciMMA)

Development of ADAM (Asteroid Decision Analysis & Mapping) impact mitigation and analysis platform

Development of NEOSSat (Near-Earth Object Surveillance Satellite) survey simulator (in Fortran)

Development of simulator (in Python) for NEO candidate follow-up with LCO's telescope network