

Katelyn Breivik

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Education

PRESENT	Ph.D. Candidate in Physics and Astronomy Advisor: Shane L. Larson	Northwestern University
2012-2013	Ph.D. student in Physics	University of Georgia
2012	B.S. in Physics with Professional Emphasis, Cum Laude	Utah State University

Publications

Accreting Double White Dwarf Binaries: Implications for LISA 2017, *ApJ*, 846, 2

KREMER, K., Breivik, K., LARSON, S. L., KALOGERA, V

Distinguishing between Formation Channels for Binary Black Holes with LISA 2016, *ApJ*, 830L, 18B

Breivik, K., RODRIGUEZ, C. L., LARSON, S. L., KALOGERA, V., RASIO, F. A.

Publications in Preparation

Combining Gaia and LISA Observations to Probe White Dwarf Binary Evolution To Be Submitted Sep. 2017

Breivik, K., KREMER, K., BUENO, M., LARSON, S. L., KALOGERA, V

Pulsar Astronomy with Multi-messenger Gravitational Wave Observations To Be Submitted Oct. 2017

Breivik, K., LARSON, S. L.

Variance in Compact Binary Population Synthesis To Be Submitted Nov. 2017

Breivik, K., LARSON, S. L.

Honors & Awards

- 2017 **NSF GK-12 'Reach for the Stars' Fellow** K-12 Teaching Fellowship
- 2017 **Chambliss Astronomy Achievement Award** Honorable Mention, 229th AAS Meeting
- 2016 **Northwestern Physics & Astronomy Rapid Fire Research** 2nd Place
- 2014 **Illinois Space Grant Consortium Graduate Fellowship** Award Amount: \$10,000
- 2010 **Undergraduate Teaching Fellowship** Utah State University
- 2010 **Undergraduate Research and Creative Opportunities (URCO) Grant** Award Amount: \$2,000
- 2008 **Presidential Fellowship - 4 years** Utah State University

Invited Seminars and Workshops

The Architecture of LISA Science Analysis: Imagining the Future Pasadena, CA

WORKSHOP AT W. M. KECK INSTITUTE FOR SPACE STUDIES

Scheduled, January 16-19, 2018

Exploring compact binary astrophysics with multi-messenger astronomy Pasadena, CA

TAPIR SEMINAR AT CALTECH

Scheduled, December 1, 2017

Exploring compact binary astrophysics with multi-messenger astronomy New York City, NY

ASTRO SEMINAR AT COLUMBIA

Scheduled, November 16, 2017

Exploring compact binary astrophysics with multi-messenger astronomy New York City, NY

ASTRO SEMINAR AT AMNH

Scheduled, November 14, 2017

Exploring stellar-mass compact binary astrophysics with LISA Milwaukee, WI

CGCA SEMINAR AT UW MILWAUKEE

June 2, 2017

Contributed Presentations

Observing Mass-Transfer in Double White Dwarfs with LISA and Gaia

TALK AT 12TH EDOARDO AMALDI CONFERENCE ON GRAVITATIONAL WAVES

Pasadena, CA

July 2017

Distinguishing Between Formation Channels for Binary Black Holes with LISA

POSTER SESSION AT 229TH MEETING OF THE AAS

Grapevine, TX

Jan. 2017

Distinguishing Between Formation Channels for Binary Black Holes with LISA

POSTER SESSION AT 11TH INTERNATIONAL LISA SYMPOSIUM

Zurich, SWI

Aug. 2016

Variance in binary stellar population synthesis

TALK AT APS APRIL MEETING

Salt Lake City, UT

April 2016

Exploring galactic binary population variance with population synthesis

TALK AT MIDWEST RELATIVITY MEETING

Evanston, IL

Oct. 2015

Probing the Milky Way electron density using multi-messenger astronomy

TALK AT APS APRIL MEETING

Baltimore, MD

April 2015

Rapid Monte Carlo Simulation of Gravitational Wave Galaxies

POSTER SESSION AT 225TH MEETING OF THE AAS

Seattle, WA

Jan. 2015

Background Sky Variability for Multi-Messenger Follow-up Surveys

POSTER SESSION AT 219TH MEETING OF THE AAS

Austin, TX

Jan. 2012

Service and Engagement

CIERA Astronomer Evenings

FOUNDER AND LEAD ORGANIZER

Dearborn Observatory

Jan. 2016 - PRESENT

Astronomy on Tap - Chicago

FOUNDING MEMBER AND PRESENTER

Chicagoland area, IL

March 2016 - PRESENT

Physics & Astronomy Graduate Student Council

ASTRONOMY OUTREACH COMMITTEE HEAD

Evanston, IL

Dec 2015 - PRESENT

Astronomy Conversations

MONTHLY VISIT TO ADLER'S SPACE VISUALIZATION LAB FOR CONVERSATIONS WITH PLANETARIUM VISITORS

Adler Planetarium

March 2016 - PRESENT

General Science Outreach and Education

PARTICIPANT

2010-Present

- I've interacted with over 1500 people at more than 15 events across the Greater Chicagoland and Salt Lake City areas; can provide more details on request

Experience

RESEARCH

Graduate Research Assistant

CIERA, NORTHWESTERN UNIVERSITY

Evanston, IL

June 2013 - Present

- Monte Carlo simulations of compact binary populations
- Predicting gravitational wave source catalogs for LISA

Undergraduate Research Assistant

UTAH STATE UNIVERSITY

Logan, UT

May 2011 - June 2012

- Characterizing sky brightness fluctuations for optical follow up of gravitational wave events

Undergraduate Researcher

UTAH STATE UNIVERSITY

Logan, UT

Aug. 2010 - May 2011

- Observation the precession of the inner Jovian moons as a probe of general relativity

TEACHING

Guest Lectures

NORTHWESTERN UNIVERSITY

- May 25, 2017: Introduction to gravitational waves for upper division undergraduate astronomy course (Astron 331)
- Nov. 11, 2016: Overview of the atomic model for introductory, concept-based physics course (Phys 103)

Evanston, IL

2016-2017

Graduate Teaching Assistant: General Physics and Astronomy Labs

UNIVERSITY OF GEORGIA

Athens, GA

Aug. 2012 - May 2013

Undergraduate Teaching Assistant: General Physics and Astronomy Labs

UTAH STATE UNIVERSITY

Logan, UT

Aug. 2010 - Jan. 2012

References

Shane L. Larson

CIERA/PHYSICS AND ASTRONOMY

NORTHWESTERN UNIVERSITY

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Vicky Kalogera

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Jeffery C. Livas

GRAVITATIONAL ASTROPHYSICS LAB

NASA/GSFC

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