SIYANG LI

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United States

EDUCATION

Johns Hopkins University *August 2020 - Current*
Doctor of Philosophy in Astronomy and Astrophysics
Thesis Advisor: Professor Adam G. Riess

University of California, Berkeley *August 2016 - May 2020*
Bachelor of Arts, High Honors in Physics, cum laude
Thesis Advisor: Professor George F. Smoot III

FIRST AUTHOR PUBLICATIONS

Siyang Li, Stefano Casertano, Adam G. Riess., "A Maximum Likelihood Calibration of the Tip of the Red Giant Branch Luminosity from High Latitude Field Giants using $Gaia$ Early Data Release 3 Parallaxes", Astrophysical Journal, 939 96 (November 10, 2022).

Siyang Li, Adam G. Riess, Michael P. Busch, Stefano Casertano, Lucas M. Macri, Wenlong Yuan., "A sub-2% Distance to M31 from Photometrically Homogeneous Near-Infrared Cepheid Period-Luminosity Relations Measured with the *Hubble Space Telescope*", Astrophysical Journal, 920, 84 (October 18, 2021).

Siyang Li, George F. Smoot III. "Characterization of a high efficiency silicon photomultiplier for millisecond to sub-microsecond astrophysical transient searches", in [*SPIE Astronomical Telescopes + Instrumentation; X-Ray, Optical, and Infrared Detectors for Astronomy IX*], *Proc. SPIE 11454*, 1145422 (December 13, 2020).

Siyang Li, George F. Smoot III, Bruce Grossan, Albert Wai Kit Lau, Marzhan Bekbalanova, Mehdi Shafiee, Thorsten Stezelberger. "Program objectives and specifications for the Ultra-Fast Astronomy observatory", in [*8th Applied Optics and Photonics China; Space Optics, Telescopes and Instrumentation*], *Proc. SPIE 11341*, 113411Y (December 18, 2019).

Siyang Li, George F. Smoot III. "Characterization of a silicon photomultiplier for the Ultra-Fast Astronomy telescope", in [*SPIE Optics + Photonics; UV/Optical/IR Space Telescopes and Instruments: Innovative Technologies and Concepts IX*], *Proc. SPIE 11115*, 111150A (September 9, 2019).

Siyang Li, Jérôme Maire, Maren Cosens, Shelley A. Wright. "Detector characterization of a near-infrared discrete avalanche photodiode 5x5 array for astrophysical observations", in [*SPIE Defense + Commercial Sensing; Infrared Technology and Applications XLV*], *Proc. SPIE 11002*, 110022G (May 7, 2019).

CO-AUTHOR PUBLICATIONS

Albert W. K. Lau, Mehdi Shafiee, George F. Smoot, Bruce Grossan, **Siyang Li**, Zhanat Maksut, "On-sky silicon photomultiplier detector performance measurements for millisecond to sub-microsecond optical source variability studies", *Journal of Astronomical Telescopes, Instruments, and Systems*, 6(4), 046002 (2020).

PRESENTATIONS

"Calibrating the Tip of the Red Giant Branch in the Era of the *James Webb Space Telescope*", *Johns Hopkins Physics and Astronomy Grad Wine & Cheese Talks*, Johns Hopkins University. Oral presentation (November 4, 2022).

"A Maximum Likelihood Calibration of the TRGB from Field Stars using *Gaia* Early Data Release 3 Parallaxes", *AAS 240 Cosmology III*, Pasadena, California, United States. Oral presentation (June 16, 2022).

"A Maximum Likelihood Determination of the Tip of the Red Giant Branch Zero-point using *Gaia* Early Data Release 3 Parallaxes", *Johns Hopkins Physics and Astronomy Grad Wine & Cheese Talks*, Online due to COVID-19 pandemic. Oral presentation (September 15, 2021).

"Characterization of a high efficiency silicon photomultiplier for millisecond to sub-microsecond astrophysical transient searches", *SPIE Astronomical Telescopes + Instrumentation; X-Ray, Optical, and Infrared Detectors for Astronomy IX (Conference 11454)*, Online due to COVID-19 pandemic. Poster and oral presentations (December 14-18, 2020).

"Characterization of silicon photomultipliers for astrophysical observations", *Summer Undergraduate Research Fellowship Conference*, Berkeley, California, United States. Oral presentation (August 22, 2019).

"Characterization of a silicon photomultiplier for the Ultra-Fast Astronomy telescope", *SPIE Optics + Photonics; UV/Optical/IR Space Telescopes and Instruments: Innovative Technologies and Concepts IX (Conference 11115)*, San Diego, California, United States. Oral presentation (August 11, 2019).

"Program Objectives and Specifications for the Ultra-Fast Astrophysics Observatory", *8th Applied Optics and Photonics China; Space Optics, Telescopes and Instrumentation (Conference 10)*, Beijing, China. Poster presentation (July 8-9, 2019).

"Development of a Single Photon Counting Detector Calibration Facility for the Ultra Fast Astronomy Project", *Exploring the Energetic Universe*, Nur-Sultan, Kazakhstan. Oral presentation (June 20, 2019).

"Detector characterization of a near-infrared discrete avalanche photodiode 5x5 array for astrophysical observations", *SPIE Defense + Commercial Sensing; Infrared Technology and Applications XLV (Conference 11002)*, Baltimore, Maryland, United States. Poster presentation (April 16, 2019).

"Characterization of a Silicon Photomultiplier for the Ultra Fast Astronomy Telescope", *Berkeley Physics Department Poster Session*, Berkeley, California, United States. Poster presentation (April 5, 2019).

"Probing Cosmic Dawn: A Search for Nanosecond Optical Counterparts to Fast Radio Bursts", *Berkeley Physics Department Poster Session*, Berkeley, California, United States. Poster presentation (April 6, 2018).

PROVISIONAL PATENT

Siyang Li, George F. Smoot III, Thorsten Stezelberger. "Silicon Photomultiplier Telescope Camera," U.S. Provisional Patent Ser. No. 62/940,250, filed November 26, 2019.

AWARDS AND FELLOWSHIPS

National Science Foundation Graduate Research Fellowship *2022 -*
5 year fellowship providing $34,000 per year in funding for three years.

Regents' and Chancellor's Scholarship *2016 - 2020*
Awarded to the highest ranked (1.6%) undergraduates at the University of California, Berkeley.

Society of Photo-Optical Instrumentation Engineers (SPIE)
Optics and Photonics Education Scholarship *2019*
Awarded "to outstanding individuals for their potential long-range contribution to optics, photonics, or other related fields" from around the world.

8th Applied Optics and Photonics China Best Poster Award *2019*
Awarded for the best poster at the 8th Applied Optics and Photonics China conference. Evaluated among posters written by master's students, Ph.D. students, and postdocs from around the world.

Measurement Science Conference Scholarship *2019*
National scholarship awarded to individuals who demonstrate potential and achievements related to measurement science. Recipients also receive full admission to the Measurement Science Conference in Anaheim, California from April 16-19, 2019 (attended).

Summer Undergraduate Research Fellowship *2019*
Awarded to fund student initiated research leading to a senior thesis and/or publication.

Berkeley Academic Opportunity Fund Grant *2019*
Awarded to fund "opportunities for individuals and student groups to represent and further the University of California, Berkeley's academic prestige and dedication to education".

Regents' and Chancellor's Research Fellowship *2017, 2018*
Awarded to fund student initiated research.

Hong Kong University of Science and Technology *June 2017, Dec. 2017,*
International Research Fellowship *Dec. 2018, July 2019*
Fellowship fully covering airfare, ground transportation, housing, and meals.

Berkeley Physics Undergraduate Research Scholarship *2017 - 2020*
Awarded to fund student research in the physics department.

TEACHING ASSISTANTSHIPS

Johns Hopkins AS.171.118 Stars and the Universe: Cosmic Evolution *Spring 2021, 2022*

Johns Hopkins AS.171.102 General Physics: Physical Science Majors II *Fall 2020*

Johns Hopkins AS.173.111 General Physics Laboratory I *Fall 2020*

OUTREACH

Program for Advancing the Health Sciences Mentor *2021-2022*
Study habits workshop mentor and one-on-one mentor for a high school student aspiring to pursue a health career.

College Resources for College and Higher-Education Mentor and Panelist *2021*
Scholarship and essay writing panelist and one-on-one mentor for an underprivileged high school student applying to college.