

Tim Linden

ASSISTANT PROFESSOR · STOCKHOLM UNIVERSITY

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Employment

Stockholm University

ASSISTANT PROFESSOR

- Department of Physics
- Member of the Oskar Klein Center

Stockholm, Sweden

Jan. 2020 – Present

The Ohio State University

POSTDOCTORAL FELLOW

- Center for Cosmology and AstroParticle Physics Fellow (July 2015 — Present)
- Einstein Postdoctoral Fellow (July 2015 — June 2016)

Columbus, OH

July 2015 — Jan. 2020

University of Chicago

POSTDOCTORAL FELLOW

- Kavli Institute for Cosmological Physics Postdoctoral Fellow
- Einstein Postdoctoral Fellow

Chicago, IL

July 2013 — June 2015

Education

University of California, Santa Cruz

PH.D. IN PHYSICS

- Thesis: *Dark Matter Annihilation in the Galactic Center*
- Advisor: Stefano Profumo

Santa Cruz, CA

Sept. 2008 — June 2013

Northwestern University

B.A. IN INTEGRATED SCIENCE PROGRAM, PHYSICS, MATHEMATICS

Evanston, IL

Sept. 2004 — June 2008

Publication Statistics

77 articles and letters (74 accepted, 3 under review)

inspire: **3722** citations, h-index: **31**

Presentation Statistics

68 conference presentations, seminars, and colloquia since January 1, 2017

11 Physics or Astronomy Department colloquia

19 invited conference presentations

Accepted Proposals and Current Support

14 accepted proposals (**4** provide current funding)

Significant Honors & Awards

2018 **Michelson Postdoctoral Prize Lectureship**
2013 — 2016 **Einstein Postdoctoral Fellowship**

Case Western Reserve University
NASA

Accepted Proposals

Illuminating WIMP Dark Matter with Resilient Astrophysical Emission Models PRIMARY INVESTIGATOR	Rymdstyrelsen Starting Grant Jan. 2020 — Dec. 2023
Using TeV Gamma-Rays to Shed Light on Cosmic-Ray Propagation PRIMARY INVESTIGATOR	Vetenskapsrådet Starting Grant Jan. 2020 — Dec. 2023
Correlating Fermi-LAT and ASAS-SN Data to Understand Blazars PRIMARY INVESTIGATOR	Fermi GI Cycle 12 Oct. 2019 — Sept. 2020
The mysterious solar gamma-ray emission: Powerful new tests at low energies CO-INVESTIGATOR (PI: ANNIKA PETER)	Fermi GI Cycle 12 Oct. 2019 — Sept. 2020
Illuminating Inner Heliospheric Cosmic Rays with Gamma Rays CO-INVESTIGATOR (PI: ANNIKA PETER)	Fermi GI Cycle 11 August 2018 — July 2019
Using XMM to study the TeV Halos Surrounding Energetic Pulsars CO-INVESTIGATOR (PI: KATIE AUCHETTL)	XMM-Newton AO-17 87 kS Observation (Oct. 2018)
Novel Diffuse Emission Models for the Central Molecular Zone PRIMARY INVESTIGATOR	Fermi GI Cycle 10 October 2017 — Sept. 2018
Using Fermi Dark Matter Annihilation Constraints to Probe the Early Universe CO-INVESTIGATOR (PI: ADRIENNE ERICKCEK)	Fermi GI Cycle 10 October 2017 — Sept. 2018
Revealing the Sun's Coronal Magnetic Fields with Gamma Rays CO-INVESTIGATOR (PI: ANNIKA PETER)	Fermi GI Cycle 10 October 2017 — Sept. 2018
Understanding γ-Rays from the Galactic Center: Constraining Millisecond Pulsars CO-INVESTIGATOR (PI: FABIO ANTONINI)	Fermi GI Cycle 8 October 2015 — Sept. 2016
The Smith Cloud: A High-Velocity Cloud Confined by Dark Matter PRIMARY INVESTIGATOR	Fermi GI Cycle 6 August 2013 — July 2014
A Multiwavelength Model for Novel Physics in the Galactic Center FELLOWSHIP RECIPIENT (PI, CHICAGO: DAN HOOPER, PI, OHIO STATE: ANNIKA PETER)	Einstein Fellowship July 2013 — June 2016
The Small Magellanic Cloud - A Case Study of X-Ray Populations at Low Metallicity CO-INVESTIGATOR (PI: ANDREAS ZEZAS)	Chandra Cycle 14 2013

Service & Outreach

Eighth International Fermi Symposium SCIENTIFIC ORGANIZING COMMITTEE	Fall 2018
Friends of Ohio State Astronomy and Astrophysics FEATURED SPEAKER	Spring 2018
Co-Chair of Local Organizing Committee TeVPA 2017 INTERNATIONAL CONFERENCE	Summer 2017
Volunteer Scientist ADLER PLANETARIUM	2013–14
Graduate Student Liason FERMILAB USERS EXECUTIVE COMMITTEE	2010–11
Referee NATURE ASTRONOMY, NATURE COMMUNICATIONS, PHYSICAL REVIEW LETTERS, PHYSICAL REVIEW, ASTROPHYSICAL JOURNAL LETTERS, ASTROPHYSICAL JOURNAL, MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, JOURNAL OF HIGH ENERGY PHYSICS, JOURNAL OF COSMOLOGY AND ASTROPARTICLE PHYSICS, ASTRONOMY & ASTROPHYSICS	2009 — Present

Significant Publications

Full list and links to all publications are accessible at <http://trlinden.com/publications.html>

- Breaking a dark degeneracy: The gamma-ray signature of early matter domination** PRD 100, 123546
STEN DELOS, TIM LINDEN, ADRIENNE ERICKCEK arXiv: 1910.08553
- A Robust Excess in the Cosmic-Ray Antiproton Spectrum: Implications for Dark Matter** PRD 99, 103026
ILIAS CHOLIS, TIM LINDEN, DAN HOOPER arXiv: 1903.02549
- TeV Halos are Everywhere: Prospects for New Discoveries** PRD 100, 043016
TAKAHIRO SUDOH, TIM LINDEN, JOHN BEACOM arXiv: 1902.08203
- Self-Generated Cosmic-Ray Confinement in TeV Halos: TeV γ -rays and the Positron Excess** PRD 98, 063017
CARMELO EVOLI, TIM LINDEN, GIOVANNI MORLINO arXiv: 1807.09263
- An Unexpected Dip in the Solar Gamma-Ray Spectrum** PRD 98 063019
QING-WEN TANG, KENNY NG, TIM LINDEN, BEI ZHOU, JOHN BEACOM, ANNIKA PETER arXiv: 1804.06846
- Evidence for a New Component of High-Energy Solar Gamma-Ray Production** PRL 121 131103
TIM LINDEN, BEI ZHOU, JOHN BEACOM, ANNIKA PETER, KENNY NG, QING-WEN TANG arXiv: 1803.09263
- Dark Kinetic Heating of Neutron Stars: An Infrared Window On WIMPs, SIMPs and Higgsinos** PRL 119, 131801
MASHA BARYAKHTAR, JOSEPH BRAMANTE, SHIRLEY WEISHI LI, TIM LINDEN, NIRMAL RAJ arXiv: 1704.01577
- Pulsar TeV Halos Explain the Diffuse TeV Excess Observed by Milagro** PRL 120, 121101
TIM LINDEN, BENJAMIN BUCKMAN arXiv: 1707.01905
- Using HAWC to Detect Invisible Pulsars** PRD 96, 103016
TIM LINDEN, KATIE AUCHETTL, JOE BRAMANTE, ILIAS CHOLIS, KE FANG, D. HOOPER, T. KARWAL, S. LI arXiv: 1703.09704
- HAWC Observations Strongly Favor Pulsar Interpretations of the Cosmic-Ray Positron Excess** PRD 96 103013
DAN HOOPER, ILIAS CHOLIS, TIM LINDEN, KE FANG arXiv: 1702.08436
- Cosmic-Ray Injection from Star-Forming Regions** PRL 117, 111101
ERIC CARLSON, TIM LINDEN, STEFANO PROFUMO arXiv: 1510.04698
- Detecting Dark Matter with Imploding Pulsars in the Galactic Center** PRL 113, 191301
JOSEPH BRAMANTE, TIM LINDEN arXiv: 1405.1031
- The Galactic Center Excess from the Annihilation of Self-Interacting Dark Matter** PRL 114 211303
MANOJ KAPLINGHAT, TIM LINDEN, HAI-BO YU arXiv: 1501.03507
- Challenges in Explaining the Galactic Center Gamma-Ray Excess with MSPs** JCAP 06 043 (2014)
ILIAS CHOLIS, DAN HOOPER, TIM LINDEN arXiv: 1407.5625
- The Characterization of the γ -Ray Signal from the Central Milky Way: A Case for Dark Matter** PDU 12 1 2016
TANSU DAYLAN, DOUG FINKBEINER, DAN HOOPER, TIM LINDEN, STEPHEN PORTILLO, N. RODD, T. SLATYER arXiv: 1402.6703
- Tying Dark Matter to Baryons with Self-Interactions** PRL 113 021302
MANOJ KAPLINGHAT, RYAN KEELEY, TIM LINDEN, HAI-BO YU arXiv: 1311.6524
- Probing the Pulsar Origin of the Anomalous Positron Fraction with AMS-02 and ACTs** ApJ 772 18
TIM LINDEN, STEFANO PROFUMO arXiv: 1304.1791
- On the Origin of the Gamma Rays from the Galactic Center** PRD 84 123005
DAN HOOPER, TIM LINDEN arXiv: 1110.0006
- The Effect of Starburst Metallicity on X-Ray Binary Formation Pathways** ApJ 725 2 1984
TIM LINDEN, VICKY KALOGERA, JEREMY SEPINSKY, ANDREA PRESTWICH, ANDREAS ZEZAS, JAY GALLAGHER arXiv: 1005.1639

Recent Colloquia, Seminars and Conferences

Presentations dating back to January 2018 are shown here.

Full list and slides from all presentations are accessible at <http://trlinden.com/presentations.html>

10-30-19	New York University High-Energy Physics Seminar	New York City, New York
9-26-19	Precision Cosmic-Ray Searches with AMS-02	Geneva, Switzerland
9-24-19	Next Frontiers in the Search for Dark Matter	Florence, Italy
7-27-19	36th International Cosmic Ray Conference	Madison, WI
6-24-19	IGC@25: Multimessenger Universe	State College, PA
6-17-19	Fermilab Particle Astrophysics Seminar	Batavia, IL
6-4-19	Photon 2019	Frascati, Italy
5-21-19	Stockholm University Beyond Standard Model Seminar	Stockholm, Sweden
4-23-19	Harvard High Energy Theory Seminar	Cambridge, MA
4-1-19	Caltech High Energy Physics Seminar	Pasadena, CA
2-13-19	University of Notre Dame High Energy Physics Seminar	Notre Dame, IN
2-12-19	University of Notre Dame Physics and Astronomy Colloquium	Notre Dame, IN
2-9-19	University of Hawai'i Institute for Astronomy Colloquium	Honolulu, HI
2-7-19	University of Hawai'i Physics and Astronomy Colloquium	Honolulu, HI
1-29-19	Penn State University Lunch Talk	State College, PA
1-24-19	Clemson University Physics and Astronomy Colloquium	Clemson, SC
1-10-19	223rd AAS Meeting - The Sun and the Solar System	Seattle, WA
1-8-19	223rd AAS Meeting - HEAD II: Fermi at 10	Seattle, WA
12-6-18	Penn State University Physics Colloquium	State College, PA
12-5-18	Penn State University High Energy Physics Seminar	State College, PA
11-30-18	University of Utah Physics and Astronomy Colloquium	Salt Lake City, UT
11-29-18	University of Utah HEAP Seminar	Salt Lake City, UT
11-9-18	Ohio University Physics and Astronomy Colloquium	Athens, OH
11-8-18	Ohio State University Astronomy Colloquium	Columbus, OH
10-31-18	Boston University High Energy Theory Seminar	Boston, MA
10-18-18	Eighth International Fermi Symposium	Baltimore, MD
10-8-18	Interplay Between Particle and AstroParticle Physics	Cincinnati, OH
10-5-18	Case Western Michelson Postdoctoral Prize Astronomy Seminar	Cleveland, OH
10-4-18	Case Western Michelson Postdoctoral Prize Physics Colloquium	Cleveland, OH
10-2-18	Case Western Michelson Postdoctoral Prize Particle Physics Seminar	Cleveland, OH
10-1-18	Case Western Michelson Postdoctoral Prize Condensed Matter Seminar	Cleveland, OH
8-30-18	TeVPA 2018	Berlin, Germany
7-26-18	Identification of Dark Matter 2018	Providence, RI
7-17-18	COSPAR 2018	Pasadena, CA
6-29-18	Fermilab Joint Experimental-Theoretical Physics Seminar	Batavia, IL
6-5-18	PASCOS 2018	Cleveland, OH
5-21-18	Mitchell Conference on Collider, Dark Matter, and Neutrino Physics	College Station, TX
5-9-18	UC - Irvine Particle Physics Seminar	Irvine, CA
5-2-18	The Small Scale Structure of Cold(?) Dark Matter	Santa Barbara, CA
4-15-18	2018 April APS Meeting	Columbus, OH
4-11-18	Towards Dark Matter Discovery Workshop	Chicago, IL
3-19-18	HEAD 2020 Decadal Meeting	Chicago, IL
3-6-18	University of Cincinnati HEP Seminar	Cincinnati, OH
2-22-18	2018 UCLA Dark Matter Workshop	Los Angeles, CA
1-31-18	University of Michigan LCTP Seminar	Ann Arbor, MI
1-10-18	American Astronomical Society 231st Meeting	Washington D.C.

Teaching and Lecturing

FK7061: Statistical Methods in Physics

Stockholm University

PROFESSOR

Winter 2020

- Joint Primary Instructor (along with Jens Jasche) on Graduate Student Course covering Frequentist and Bayesian Methods of Statistical Modeling. Provided nine lectures covering frequentist statistics.
- Responsibility for Course Evaluation and Final Grades.

80th Compton Lecture Series

University of Chicago

LECTURER

Fall 2014

- Produced, organized, and presented nine weekly public lectures to approximately 75 people
- Lecture Series Title: *Shining Light on the Dark Side of the Universe*

Physics 116B (Mathematical Methods in Physics)

University of California, Santa Cruz

TEACHING ASSISTANT

Winter 2012

- Led Weekly Recitation Sessions, held office hours, and graded exams.
- Topics included Differential Equations, Linear Algebra, Matrices, Eigenvectors and Eigenvalues

Physics 5A (Classical Mechanics)

University of California, Santa Cruz

TEACHING ASSISTANT

Fall 2011

- Led Laboratory Portion of the Course, held office hours, and graded homework and exams.
- Topics Included kinematics, conservation of momenta and energy, simple harmonic motion.

Co-Advised Students

Takahiro Sudoh

Faculty Advisor: Tomonori Totani

VISITING GRADUATE STUDENT, THE OHIO STATE UNIVERSITY

2018 — Present

Ben Buckman

Faculty Advisor: Annika Peter

GRADUATE STUDENT, THE OHIO STATE UNIVERSITY

2015 — Present

Ke Fang

Faculty Advisor: Angela Olinto

GRADUATE STUDENT, UNIVERSITY OF CHICAGO

2014—2015

Miles Gray

Faculty Advisor: Stefano Profumo

UNDERGRADUATE STUDENT, UNIVERSITY OF CALIFORNIA, SANTA CRUZ

2012—2013

Eric Carlson

Faculty Advisor: Stefano Profumo

GRADUATE STUDENT, UNIVERSITY OF CALIFORNIA, SANTA CRUZ

2011—2016

References

John Beacom

PROFESSOR OF PHYSICS AND ASTRONOMY — THE OHIO STATE UNIVERSITY

- beacom.7@osu.edu
- (614) 247-8102

Dan Hooper

SCIENTIST — FERMILAB; ASSOCIATE PROFESSOR OF ASTRONOMY — UNIVERSITY OF CHICAGO

- dhooper@fnal.gov
- (630) 840-3758

Stefano Profumo

Thesis Advisor

PROFESSOR OF PHYSICS — UNIVERSITY OF CALIFORNIA, SANTA CRUZ

- profumo@ucsc.edu
- (831) 459-3039

Tracy Slatyer

ASSOCIATE PROFESSOR OF PHYSICS — MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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