Theoretical Astrophysics, California Institute of Technology MC 350-17, 1200 E. California Boulevard, CA 91125, USA
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Education:

Ph.D.	Astronomy, Harvard University (Advisor: Prof. Lars Hernquist)	June 2008
	"A Physical Model for the Fueling and Evolution of Quasars in Galaxy Mergers"	
M.A.	Astronomy, Harvard University	June 2005
B.A.	Astrophysics, Princeton University (Advisor: Prof. Neta Bahcall)	June 2004
	Summa Cum Laude, with Distinction in Astrophysical Sciences	

Appointments:

Professor, Theoretical Astrophysics, California Institute of Technology	2017 - present
Associate Professor, Theoretical Astrophysics, California Institute of Technology	2016 - 2017
Assistant Professor, Theoretical Astrophysics, California Institute of Technology	2013 - 2016
Einstein Fellow, University of California at Berkeley (Host: Prof. Eliot Quataert)	2011 - 2013
Miller Fellow, University of California at Berkeley	2008 - 2011

Awards & Honors:

Caltech Graduate Student Council Mentoring Award	2016
American Astronomical Society Helen B. Warner Prize for Astronomy	2016
National Science Foundation CAREER (Faculty Early Career Development) Award	2015
Alfred P. Sloan Foundation, Sloan Research Fellowship Award	2014
Harvard-Smithsonian Center for Astrophysics, Bart J. Bok Prize	2012
Astronomical Society of the Pacific, Robert J. Trumpler Award	2011
Miller Institute for Basic Research in Science Fellowship	2008
Beatrice Tinsley Visiting Scholar, University of Texas at Austin	2008 & 2010
Hubble & Chandra Postdoctoral Fellowships (declined)	2008
Harvard Merit Fellowship (Graduate School of Arts and Sciences)	2007
National Science Foundation Graduate Research Fellowship	2005
NASA Harriet G. Jenkins Pre-Doctoral Fellowship (declined)	2005
Phi Beta Kappa, Sigma Xi, Princeton University	2004
Elizabeth Clarke Scholarship, Lucent Global Science Scholars Award	2000 & 2001

Professional Services, Outreach, & Synergistic Activities

Teacher at various graduate-level Summer Schools: ICC Durham Novicosmo Cosmology school 2007, UC Santa Cruz Astro-Computing Summer School [Galaxy Simulations, 2010; Star Formation, 2013, 2014], Flatiron Institute Kavli Summer Program 2018. Developing interactive series of classroom demonstrations of astrophysical concepts in new California state science curriculum (2016, 2017)

Created animations for various outreach activities, including: feature films "Voyage of Time" (2016) & "Star Men" (2015), various Science and Sky & Telescope online exhibits, reference animations for "Pixar University" at Disney-Pixar studios (2014), special planetarium shows at Tartu Observatory (Estonia; 2015) and Shafran Planetarium (Cleveland; 2013, 2017), 50th anniversary Star Trek Convention (2017), animations for television (NHK Japan's "Cosmic Front NEXT" series, 2015; BBC World News, 2017)

Development and public release of new computational algorithms for smoothed-particle hydrodynamics (fluid dynamics simulations), and a new public codes for radiation-magneto-hydrodynamics, Made available online at "The Astro-Code Wiki" & "The Astrophysics Source Code Library"

Journal Referee for Nature, ApJ, MNRAS, Annual Reviews, A&A. Member of various Time Allocation Committees (e.g. NASA, NSF, DOE, NRAO, NAOJ [Japan]), as well as Conference Science & Local Organizing Committees (23 conferences), and Award Selection Committees (e.g. NSF CAREER, NASA Hubble & Einstein Postdoctoral Fellowships). Proposal Referee, European Research Council (2008, 2014, 2015, 2017). Lead organizer, Keck Institute for Space Studies study on Star Formation (November 2014)

Mentoring Activity: Hosted multiple undergraduate summer students through the summer undergraduate research fellowship (SURF) program (2014, 2015, 2016, 2017). Organized astronomy visualization and

outreach program for high school students and high school teacher from the Creative Arts Media and Design program at Pasadena High School (2016, 2017).

Committees: 2013-2014: Grad. admissions (Astronomy), Curriculum
2014-2015: Grad. admissions (Physics), Colloquium (Chaired), Grad. Qualification, & Visitor
2015-2016: Grad. admissions (Physics), Colloquium, Grad. Qualification, & Curriculum
2016-2017: Grad. admissions (Astronomy), Grad. Qualification, Curriculum, Hiring Tracking
2017-2018: Colloquium (Chaired), Staffing (Physics & Astronomy), Grad. Qualification

Students & Postdocs Advised:

Postdocs: Andrew Wetzel (Caltech-Carnegie Joint Theory Postdoc), Ji-Hoon Kim (Einstein Fellow), Chris Hayward (Burke Center Postdoc), Christine Corbett-Moran (NSF Fellow), Paul Torrey (MIT-Caltech Joint Postdoc), Shea Garrison-Kimmel (Einstein Fellow), Astrid Lamberts, Cameron Hummels (NSF Fellow), Anne Medling (Hubble Fellow), Coral Wheeler (Burke Institute Prize Fellow), Robyn Sanderson (NSF Fellow), Jonathan Squire (Sherman Fairchild Fellow), Eve Lee (Sherman Fairchild Fellow) Lina Necib (Burke Fellow)

Graduate Students: Xiangcheng Ma (Physics), David Guszejnov (Physics), Denise Schmitz (Astronomy), Matt Orr (Physics), Mike Grudic (Physics), Hannalore Gerling-Dunsmore (Physics) Kung-Yi Su (Physics), Ivanna Escala (Astronomy)
Secondary Advisor: Antonija Oklopčić (Astronomy), Victor Robles (Cinvestav, Mexico)

Undergraduate Students: Nailen Matschke (SURF 2014), Nick Zolman (SURF 2014) Hyunseok Lee (SURF 2015), David Khatami (Summer, 2015), Kareem El-Badry (Summer 2015) Matthew Colbrook (Summer 2015), Charles Watson (Summer 2016) Gefei Dang (SURF 2016), Rafael Fueyo-Gomez (SURF 2016), Eric Moseley (SURF/Thesis 2017) Stefania Moroianu (Cam-SURF 2017), Ben Calvin (SURF 2017), Daniel Cushey (SURF 2017) Matthias Raives (Thesis 2015), Clarke Esmerian (Thesis 2016), Tianyi Hu (Thesis 2016)

Teaching:

Cosmology & Galaxy Formation (Graduate & advanced undergraduates, Caltech)	‘14, ‘15, ‘16
Galaxy Structure & Formation (Graduate & advanced undergraduates, Caltech)	‘17, ‘18
High-Energy Astrophysics (Graduate & advanced undergraduates, Caltech)	‘18
Graduate Student Journal Club (Supervisor; Caltech)	‘15
Applications of Classical Physics (Graduate students, Caltech)	‘14, ‘16
The Interstellar Medium (Graduate & advanced undergraduates, Caltech)	‘14 & ‘16
Introduction to Astronomy (TA; Undergraduate students, Harvard)	‘05 & ‘06
The Universe (TA; Undergraduate students, Princeton)	‘03 & ‘04

Selected Media Highlights:

Animations of galaxy formation simulations featured in “Voyage of Time” (Director Terrence Malick, Narrators Brad Pitt & Cate Blanchett), a nationally-distributed IMAX feature film (2016), and “Star Men” (Director Alison E. Rose, 2015)

Press Briefings, American Astronomical Society Meetings 224 (2014), 226 (2015), 228 (2016); Helen Warner Plenary Prize Talk 229 (2017)

Panelist, H. G. Wells 150th Birthday Film Panel, LA Public Library (September 2016); “The Science Behind *The Expanse*,” Caltech (January 2017); Star Trek 50th Anniversary Convention, Las Vegas (August 2017)

Television Interview, NHK Japan “Cosmic Front NEXT” Episode “Mysteries of Ancient Supermassive Black Holes” (July 2015)

Radio Interview, TBS eFM South Korea “This Morning,” discussing black holes (November 2014), BBC World News (July 2017)

Invited public talk at “Pixar University” Lecture Series, Disney-Pixar Headquarters (“Making Galaxies on a Computer,” August 2014)

Magazine interviews & coverage:

Forbes: "Galaxies on FIRE," working title, Alex Knapp, article to be published 2018

Popular Mechanics "Astronomers Created the Most Detailed Computer Model of the Galaxy," Jay Bennett, September 2016; "We've Finally Discovered What's Driving the Most Impossibly Bright Galaxies in the Universe," William Herkewitz, September 2015

Time Magazine: "Millions of Stars May Be Made of Nothing But Metal," Nash Jenkins, July 2014

LA Times: "Why Were Some Ancient Galaxies so Bright?," Amina Khan, September 2015

Scientific American: "LIGO Discoveries Will Help Scientists Run Stellar Autopsies on Colliding Black Holes," Shannon Hall, June 2016

Science: "Why Are Some Galaxies a Thousand Times Brighter than the Milky Way?," Daniel Clery, September 2015; "A Quest for Cosmic Karma," News Focus, Yudhijit Bhattacharjee, July 2009; "Coming Into Focus: A Universe Shaped By Violent Galaxies," Robert Irion, September 2005

Physics Today: "Supernovae, Supercomputers, and Galactic Evolution," Philip Hopkins, April 2017

Sky & Telescope: "Milky Way May be Made with Swapped Gas," Camille Carlisle, July 2017; "Missing Dwarf Galaxies Never Were," Camille Carlisle, June 2016; "Making the Brightest, Rarest Galaxies," Monica Young, September 2015; "Why Galaxies Delay Star Birth," Camille Carlisle, February 2014; "A Quasar In Every Galaxy?" Robert Irion, special issue July 2006; "Galaxy Merger Movies," Robert Naeye, May 2006

Science News: "Half of the Milky Way comes from Other Galaxies," Ashley Yeager, July 2017; "Possible perp found in mystery of Milky Ways missing galaxy pals," Chris Crockett, June 2016; "Lopsided Stellar Disks Help Black Holes Guzzle Gas," Ron Cowen, March 2010

Io9: "A New Class of Stars is Made Entirely of Metal," Mark Strauss, July 2014

Tech Times: "How a Texas Supercomputer Solved an Interstellar Mystery," Robin Burks, Dec. 2013

Universe Today: "Using the Missing Physics of Stellar Feedback to Accurately Simulate Galaxies from the Big Bang to Today," Shannon Hall, November 2013

New Scientist: "Warped Stars Feed Black Holes to Fatten Them Up," April 2010

Social Media: Coverage of MNRAS Angles-Alcazar et al., 2017, 470, 1050 reached the front page of Gizmodo (Gawker media network), Reddit, and Science News (July 2017). Coverage of ApJ Letter Wetzel, Hopkins et al. 2016, 827, L23 reached the front page of several international news & media sites including BoingBoing and Nature World News (September 2016). Coverage of MNRAS Hopkins et al., 2014, 445, 581, reached the front page of Yahoo!, Business Insider, and Science Daily News (June 2014). Coverage of the ApJ paper "Some Stars are Totally Metal" reached the front page of Reddit, io9 (the Gawker media network), Fark, and Slashdot (July 2014)

See `http://www.tapir.caltech.edu/~phopkins/Site/Press.html` for a complete list

Grants & Proposals:

Grants Awarded as PI or Co-PI:

NSF CAREER (Faculty Early Career Development Award)	NSF.1455342	$749,782	07/15-07/20
Alfred P. Sloan Research Fellowship	BR2014-022	$50,000	11/15-11/16
JPL R&TD (Prime Sponsor: NASA)	JPL 1589742	$130,000	09/17-10/18
NASA Astrophysics Theory Proposal (ATP)	17-ATP17-0214	$460,232	06/18-06/20
NASA Astrophysics Theory Proposal (ATP)	NNX15AT06G	$169,437	10/15-10/18
NASA Astrophysics Theory Proposal (ATP)	NNX14AH35G	$448,722	07/14-07/17
NSF Collaborative Research (CDS&E)	NSF.1715847	$325,405	09/17-09/20
NSF Collaborative Research (CDS&E)	NSF.1411920	$325,254	07/14-07/17
NSF Petascale Computing Resource Allocations	NSF.1713353	$20,064	06/17-06/19
NASA Einstein Postdoctoral Fellowship Program	PF1-120083	$279,378	09/11-08/13

Major Grants Awarded as Co-I:

SpIES Spitzer Legacy Survey (PI Gordon Richards)	SSC-GO-9-90045	$440,250	10/12-09/15
Hubble Multi-Cycle Treasury Proposal (PI Sandra Faber)	HST-GO-12060	$6,586,000	09/10-12/13

Computing Time Allocations Awarded as PI or Co-PI:

NSF Petascale Computing Resource Allocations	NSF.1713353	1.6e8 CPU-hrs	06/17-06/19
NSF XSEDE (Extreme Science & Discovery Environment)	TG-AST130039	6.3e6 CPU-hrs	09/16-09/17
NSF XSEDE	TG-AST130039	7.0e6 CPU-hrs	09/15-09/16
NSF XSEDE	TG-AST130039	5.0e6 CPU-hrs	09/14-09/15
NSF XSEDE	TG-AST140064	3.2e6 CPU-hrs	06/16-06/17
NSF XSEDE	TG-AST140064	1.2e6 CPU-hrs	09/14-09/15
NSF XSEDE	TG-AST130039	3.6e6 CPU-hrs	09/13-09/14
NSF XSEDE	TG-AST120025	1.1e6 CPU-hrs	09/13-09/14
NSF XSEDE	TG-AST120025	1.8e6 CPU-hrs	09/12-09/13
NSF XSEDE	TG-AST120025	1.8e6 CPU-hrs	09/12-09/13
NASA HECC (High-End Computing Capability)	SMD-16-7592	2.0e7 CPU-hrs	09/17-09/18
NASA HECC	SMD-16-7592	1.8e7 CPU-hrs	09/16-09/17
NASA HECC	SMD-16-7223	1.8e7 CPU-hrs	09/16-09/17
NASA HECC	SMD-15-6382	1.2e7 CPU-hrs	09/15-09/16
NASA HECC	SMD-14-5548	0.5e6 CPU-hrs	09/14-09/15
DOE OLCF Titan Director's Discretionary Allocation	AST123	4.0e6 CPU-hrs	09/16-04/17
DOE ALCF Mira Director's Discretionary Allocation	GalaxiesOnFIRE	2.2e6 CPU-hrs	09/16-04/17

(Total time 2.7e8 CPU-hrs, equivalent to dollar award of $13,500,000 at NSF estimated value $0.05/hr)

Publications & Invited Talks:

(See attached list for complete summary)

Publications: 215 peer-reviewed publications (99 first-author), with total citations >18,800 (∼11,000 first-author), >243,000 reads (∼139,000 first-author), and h-index of 73 (54 first-author) (from ADS Labs)

Talks: >180 invited talks including colloquia, invited seminars and international astronomy conference talks, at institutions in North and South America, Europe, Asia, and Australia.