

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

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

Appointments:

<i>Assistant Professor, Theoretical Astrophysics</i> , California Institute of Technology	2013 - present
<i>Einstein Fellow</i> , University of California at Berkeley (Host: Prof. Eliot Quataert)	2011 - 2013
<i>Miller Fellow</i> , 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, including Novicosmo Cosmology school 2007 (sponsored by ICC Durham University), & Astro-Computing Summer School on Galaxy Simulations 2010 and on Star Formation 2013 and 2014 (sponsored by UC Santa Cruz). Developing interactive series of classroom demonstrations of astrophysical concepts in new California state science curriculum (2016).

Created animations for various outreach activities, including: feature film “Voyage of Time” (2016), 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), and animations for television (NHK Japan’s “Cosmic Front NEXT” series, 2015)

Development and public release of new computational algorithms for smoothed-particle hydrodynamics (fluid dynamics simulations), and a new public codes for 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, NRAO, NAOJ [Japan]), as well as Conference Science & Local Organizing Committees (13 conferences), and Award Selection Committees (e.g. NSF CAREER, NASA Hubble & Einstein Postdoctoral Fellowships). Proposal Referee, European Research Council (2008, 2014, 2015). 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). 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).

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)

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 student, 2015), Matthew Colbrook (Summer student, 2015), Charles Watson (Summer student, 2016), Gefei Dang (SURF, 2016), Rafael Fueyo-Gomez (SURF, 2016) Matthias Raives (Thesis, 2015), Clarke Esmerian (Thesis, 2016), Tianyi Hu (Thesis, 2016)

Selected Media Highlights:

Animations of galaxy formation simulations to appear in “Voyage of Time” (Director Terrence Malick, Narrators Brad Pitt & Cate Blanchett), a nationally-distributed IMAX feature film (2016)

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

Press Briefings, American Astronomical Society Meetings 224 (June 2014) & 226 (June 2016)

Radio Interview, TBS eFM South Korea “This Morning,” discussing black holes (November 2014)

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 fall 2016)

Sky & Telescope (“Missing Dwarf Galaxies Never Were,” Camille Carlisle, June 2016)

Science News (“Possible perp found in mystery of Milky Ways missing galaxy pals,” Christopher Crockett, June 2016)

Sky & Telescope (“Making the Brightest, Rarest Galaxies,” Monica Young, September 2015)

LA Times (“Why Were Some Ancient Galaxies so Bright?,” Amina Khan, September 2015)

Science (“Why Are Some Galaxies a Thousand Times Brighter than the Milky Way?,” Daniel Clery, September 2015)

Popular Mechanics (“We’ve Finally Discovered What’s Driving the Most Impossibly Bright Galaxies in the Universe,” William Herkewitz, September 2015)

Sky & Telescope (“Why Galaxies Delay Star Birth,” Camille Carlisle, February 2014)

Time Magazine (“Millions of Stars May Be Made of Nothing But Metal,” Nash Jenkins, July 2014)

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)

Science News (“Lopsided Stellar Disks Help Black Holes Guzzle Gas,” Ron Cowen, March 2010)

Science (“A Quest for Cosmic Karma,” News Focus, Yudhijit Bhattacharjee, July 2009)

Sky & Telescope (“A Quasar In Every Galaxy?” Robert Irion, special issue July 2006)

Sky & Telescope (“Galaxy Merger Movies,” Robert Naeye, May 2006)

Science (“Coming Into Focus: A Universe Shaped By Violent Galaxies,” Robert Irion, September 2005)

Social media: Coverage of the ApJ paper “Some Stars are Totally Metal” reached the top page of several international news & media aggregator sites including 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