Michael K. McCourt

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Education and Academic Positions

UC Santa Barbara	*2016–present*	KITP and Hubble Fellow
	2015–2016	Postdoc
Harvard	*2014–2015*	ITC Fellow
UC Berkeley	*2008–2014*	Graduate Student · *2014: Ph.D. astrophysics* · *2010: M.A. astrophysics* · *advisor: Eliot Quataert*
Stanford University	*2005–2008*	Undergraduate Student · *2008: B.S. physics* · *concentration in theoretical physics* · *advisor: Roger Blandford*

Awards

UC Berkeley	*April 2014*	Mary Elizabeth Uhl Prize
	May 2012	Robert J. Trumpler Graduate Student Excellence Award
Stanford University	*Fall 2007*	Nomination for the Churchill Scholarship
	Summer 2006	VPUE Grant for Undergraduate Research
Rose Hills Foundation	*Summer 2007*	Rose Hills Award for Undergraduate Research

Professional Service

- Organizer ("Mentor Master") for the UC Berkeley Astronomy Department peer-mentoring system.
- Referee for the *Astrophysical Journal*, *MNRAS*, *Astrophysics and Space Science*, and *Nature Letters*.
- Author of several open-source emacs packages, including a popular major mode for editing gnuplot scripts and a browser for fetching BibTeX entries from ADS. Both are available in the MELPA package repository

Teaching Experience

UC Santa Barbara	*2016–present*	Supervising undergraduate research

· *Teaching advanced fluid dynamics to two undergraduate students*

UC Berkeley — *2008–2009* — Graduate Student Instructor

Stanford University — *2008* — Undergraduate Instructor

· *co-designed and taught a course on numerical methods (Physics 90SI) under the student-initiated course program.*

COMPUTING GRANTS

most of these proposals are collaborative; this list includes only grants where I was a primary author

	agency	award ($\times 10^6$ hour)	value ($k)	year
7	NSF	1.6	55	2016
6	NSF	1.2	40	2016
5	NSF	0.6	20	2015
4	NSF	3.2	110	2015
3	NASA	4.7	100	2015
2	NSF	2.6	89	2014
1	NASA	2.4	75	2014
	total:	16.3	489	

PUBLICATIONS

18. Fielding, Quataert, McCourt, & Thompson, *arxiv* (2016)
"*The Impact of Star Formation Feedback on the Circumgalactic Medium*"

17. Guillochon, McCourt, Chen, Johnson, et al., *ApJ* (2016)
"*Unbound Debris Streams and Remnants Resulting from the Tidal Disruptions of Stars by Supermassive Black Holes*"

16. Madigan & McCourt, *MNRAS* (2016)
"*A new inclination instability reshapes Keplerian discs into cones: application to the outer Solar system*"

15. Lecoanet, McCourt, Quataert, Burns, et al., *MNRAS* (2016)
"*A validated non-linear Kelvin-Helmholtz benchmark for numerical hydrodynamics*"

14. Madigan, McCourt, & O'Leary, *arxiv* (2016)
"*Using gas clouds to probe the accretion flow around SgrA*: G2's delayed pericenter passage*"

13. McCourt & Madigan, *MNRAS* (2016)
"*Going with the flow: using gas clouds to probe the accretion flow feeding Sgr A**"

12. McCourt, O'Leary, Madigan, & Quataert, *MNRAS* (2015)
"*Magnetized gas clouds can survive acceleration by a hot wind*"

11. McBride & McCourt, *MNRAS* (2014)
"*Bent radio jets reveal a stripped interstellar medium in NGC 1272*"

10. Wagh, Sharma, & McCourt, *MNRAS* (2014)
"*Thermal conduction and multiphase gas in cluster cores*"

9. McCourt, Quataert, & Parrish, *MNRAS* (2013)
"*What sets temperature gradients in galaxy clusters? Implications for non-thermal pressure support and mass-observable scaling relations*"

8. Sharma, McCourt, Parrish, & Quataert, *MNRAS* (2012)
"*On the structure of hot gas in haloes: implications for the L_X-T_X relation and missing baryons*"

7. Parrish, McCourt, Quataert, & Sharma, *MNRAS* (2012)
"*The effects of anisotropic viscosity on turbulence and heat transport in the intracluster medium*"

6. Sharma, McCourt, Quataert, & Parrish, *MNRAS* (2012)
"*Thermal instability and the feedback regulation of hot haloes in clusters, groups and galaxies*"

5. McCourt, Sharma, Quataert, & Parrish, *MNRAS* (2012)
"*Thermal instability in gravitationally stratified plasmas: implications for multiphase structure in clusters and galaxy haloes*"

4. Parrish, McCourt, Quataert, & Sharma, *MNRAS* (2012)
"*Turbulent pressure support in the outer parts of galaxy clusters*"

3. McCourt, Parrish, Sharma, & Quataert, *MNRAS* (2011)
"*Can conduction induce convection? On the non-linear saturation of buoyancy instabilities in dilute plasmas*"

2. Bradač, Schrabback, Erben, McCourt, et al., *ApJ* (2008)
"*Dark Matter and Baryons in the X-Ray Luminous Merging Galaxy Cluster RX J1347.5-1145*"

1. Samulon, Islam, Sebastian, Brooks, et al., *Phys. Rev. B* (2006)
"*Low-temperature structural phase transition and incommensurate lattice modulation in the spin-gap compound $BaCuSi_2O_6$*"

SELECTED PRESENTATIONS

22.	*Seminar*, Cold Universe Workshop	June 2016
21.	*Astronomy Seminar*, UCSB	April 2016
20.	*Lunch Talk*, Harvard ITC	April 2015
19.	*Pizza Lunch*, Harvard ITC	April 2015
18.	*Lunch Talk*, UCSB	April 2015
17.	*Lunch Talk*, UC Berkeley	March 2015
16.	*Contributed Talk*, Black Holes in Dense Star Clusters	January 2015
15.	*Cosmology Seminar*, Yale	September 2014
14.	*CIERA Astrophysics Seminar*, Northwestern	September 2014
13.	*Lunch Talk*, UC Berkeley	February 2014
12.	*TAPIR Seminar*, Caltech	October 2013

11. *KIPAC "Tea-Talk" Seminar*, Stanford — October 2013
10. *ITC Seminar*, Harvard CfA — September 2013
9. *Geo- and Astro-physical Fluid Dynamics Seminar*, UCSC — April 2013
8. *Invited Talk* , SnowCluster conference — March 2013
7. *Astrophysics Seminar*, UCSB — October 2012
6. *Theory Seminar* , CITA — October 2012
5. *Informal Astrophysics Seminar*, Princeton IAS — October 2012
4. *Invited Talk*, Theory & Computation in the ICM — August 2012
3. *KITP Theory Lunch talk*, UCSB — April 2011
2. *Contributed Talk*, Theory & Computation in the ICM — August 2010
1. *KIPAC "Tea-Talk" Seminar*, Stanford — August 2006

USELESS AND UNUSUAL SKILLS

- *building boats*
- *making furniture*
- *picking locks*
- *restoring vintage fountain pens*
- *designing and building lightweight camping gear*
- *growing heirloom tomatoes and peppers in inappropriate climates*
- *adjusting automatic watches*

Last updated: July 2, 2016

current version: mkmcc.github.io/cv/mkmcc-cv.pdf