

Ann-Marie Madigan

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Employment

2016 - present Assistant Professor & JILA Fellow, CU Boulder
2012 - 2016 NASA Einstein & TAC Postdoctoral Fellow, UC Berkeley

Education

2012 *Ph.D., Astronomy*
 Leiden University, The Netherlands
2007 *M.Sc., Astronomy*
 Leiden University, The Netherlands
2004 *B.Sc., Honors Physics & Astronomy*
 National University of Ireland, Galway

Awards & Grants

2018 *Packard Fellowship for Science and Engineering*
 \$875k grant (PI)
2016 *NASA Astrophysics Theory Program*
 \$640k grant (PI)
 NASA Solar System Workings
 \$600k grant (PI)
2015 *NASA Pleiades*
 7 million CPU hr supercomputing grant (PI)
2014 *NSF XSEDE*
 2.5 million CPU hr supercomputing grant (co-PI)
2012 *NASA Einstein Postdoctoral Fellowship (3 years)*
 Theoretical Astrophysics Center Postdoctoral Fellowship (UC Berkeley, 1 year)
2010 *Block Award*
 Best talk of “promising young physicist”, Aspen Center for Physics
2011 *NWO TopTalent Fellowship*
 Independent Ph.D. research grant, The Netherlands (4 years)

Invited Colloquia* & Seminars

2021	*University of Washington *Pontificia Universidad Católica de Chile
2020	*Caltech *University of Chicago
2019	*Harvard University
2018	*McGill University *University of Michigan *Michigan State University *University of Kentucky *University of Florida Theoretical Astrophysics Seminar, University of California, Berkeley University of Colorado Center for Astrobiology Seminar
2017	*Pennsylvania State University Theoretical Astrophysics inc. Relativity & Cosmology (TAPIR) seminar, Caltech
2016	*University of Amsterdam *Leiden University *Nijmegen University *University of Arizona *University of California, Berkeley *University of Colorado, Boulder Canadian Institute for Theoretical Astrophysics (CITA)
2015	*Institute for Astronomy, Hawaii *University of California, Los Angeles
2014	IMPS seminar, UC Santa Cruz University of California, Davis
2013	Nova Galactic Center day, Amsterdam, The Netherlands
2012	*University of California, Santa Cruz *University of Birmingham, UK
2011	Seminar at Swinburne University of Technology, Australia

Invited Conference Talks

2018	“Open questions in Astrophysics”, Niels Bohr Institute, Denmark
2017	“Tidal Disruption Events: Piercing the Sphere of Influence”, Cambridge, UK
2016	“Fellows at the Frontiers”, Northwestern University “Dynamics & Accretion at the Galactic Center”, Aspen Center for Physics
2015	AAS Division on Dynamical Astronomy, Caltech

2014	“Stellar N -body Dynamics”, Italy
2013	“Black Hole Fingerprints”, Snowpac conference, Utah
2012	Marcel-Grossman Meeting on General Relativity, Sweden
2009	Astronomical Science Group of Ireland Conference

Public Outreach

2021	Astronomy outreach talk at Eagle-Rock High School
2020	Panelist for “Women of JILA - Speaker Series”
2018	TEDx Boulder talk “ <i>Black Hole Sun</i> ” Keynote speaker for Denver Astronomical Society Holiday Banquet Invited talk for Students for the Exploration and Development of Space (SEDS)
2017	Astronomy on Tap speaker, Boulder University of Colorado astronomy club speaker
2016	Invited public talk at SETI institute “ <i>The bizarre orbits of minor planets beyond Neptune</i> ”
2014	Invited talk for seminar series “ <i>What Physicists Do</i> ”, Sonoma State University
2013	<i>Dinner with a scientist</i> outreach event for Oakland school district
2011	Invited outreach talks: Technical University Eindhoven, The Netherlands De Leidsche Flesch, Leiden, The Netherlands <i>Careers in science</i> , St. Louis High School, Ireland

CU Boulder Teaching

Spring 2021	ASTR-2030: Black Holes Undergraduate non-majors course, 3 credits
Fall 2020	ASTR-6000: Spiral Arm Formation and Dynamics Graduate seminar, 1 credit
Spring 2018, 2019	ASTR-1030: Accelerated Introduction to Astronomy Undergraduate majors course, 4 credits
Fall 2016, 2018	ASTR-5820: Origin & Evolution of Planetary Systems Graduate course, 3 credits
Fall 2017, 2020	ASTR-3710: Formation & Dynamics of Planetary Systems Undergraduate majors course, 3 credits

Students and postdocs advised at CU Boulder

2020 - present	Tatsuya Akiba Emma Lieb (co-advisor) Allie Christensen	graduate student undergraduate undergraduate
2019 - present	Angela Collier Maria Tiongco	postdoc postdoc
2018 - present	Aleksey Generozov Hayden Foote Gwendalynn Roebke Jacob Moss (co-advisor) Alexander Rodriguez (co-advisor)	postdoc undergraduate undergraduate undergraduate undergraduate
2017 - present	Heather Wernke Alexander Zderic	graduate student graduate student
2017 - 2018	Sean Moss Aidan Jared Jacob Fleisig	undergraduate undergraduate undergraduate

University Service

2020	Member of APS Executive Committee (- present) Co-chair of Representation, Recruitment and Retention Departmental Action Team (R ³ DAT) committee (- present) Member of graduate admissions committee Panelist for Research and Innovation Office (RIO) Webinar
2019	Member of Packard Fellowship internal competition review committee (- present)
2018	Member of faculty search committee for time-domain hire Chair of (newly formed) APS social committee (- 2019) Member of faculty search set-up committee Organizer of 'Women in Astro' lunches (- present) Organizer of 'Under-Represented Minorities in Astro' lunches (- present)
2017	Honors Thesis Representative for the APS department (- present) Member of faculty search committee for planetary science hire Member of graduate admissions committee Member of colloquium committee
2016	Founder of undergraduate research opportunities symposium (- present) Organizer of weekly APS journal club (- present)
2015	Founder of undergraduate research symposium, UC Berkeley Organizer of <i>Theoretical Astrophysics Center</i> seminars, UC Berkeley

External Service

2021	Science advisor for Heising-Simons Foundation
2020	NSF Astronomy and Astrophysics Research Grants (AAG) panel member
2019	SOC member, “New Horizons in Galactic Center Astronomy & Beyond”, Japan
2018	LOC member, AAS Dynamical Division of Astronomy (DDA) meeting, Boulder
2017	NASA Astrophysics Theory Program (ATP) panel member AAS Dynamical Division of Astronomy committee member (- 2019) Session chair at AAS Dynamical Division of Astronomy Conference, London Reviewer for The Israel Science Foundation (Joint NSFC-ISF Research Grant)
2015	Reviewer for NASA Earth and Space Science Fellowship, <i>stars</i> panel Reviewer for NASA Earth and Space Science Fellowship, <i>extra-galactic</i> panel
2014	Hubble Space Telescope allocation committee, Cycle 22, <i>stars</i> panel

CU Boulder Examination Committees

2020	Daniel Segal Anna Pusack Allyson Leffler Hayden Foote John-Faulhaber Ryder-Strauss Jenna Kishinevsky	APS Comps II (chair) APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis Physics undergraduate honors thesis
2019	Zach Milby Dylan Gatlin Maya Yanez Claire Lamman Carlos Eytan Gary Bicas Evan Tucker	APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis Geology undergraduate honors thesis
2018	Erika Zetterlund Ryan Diaz-Perez Hayley Roberts Heather Wernke Alexander Zderic Daniel Brack Jacob Fleisig Amanda Alexander Cami Nasr Ian Cadenhead Odysseus Quarles	APS Dissertation APS Comps II APS Comps II APS Comps II (advisor) APS Comps II (advisor) Aerospace Engineering Comps II APS undergraduate honors thesis (advisor) APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis APS undergraduate honors thesis

	Parker Hinton	APS undergraduate honors thesis
	Rachel McClure	APS undergraduate honors thesis
2017	Keri Hoadley	APS Dissertation
	Morgan Rehnberg	APS Dissertation
	Aaron Stemo	APS Comps II
	Nicole Arulanantham	APS Comps II

Publications

20. Rodriguez, Generozov & **Madigan**, *accepted to MNRAS* (2020)
Galactic merger implications for eccentric nuclear disks: a mechanism for disk alignment
19. Zderic & **Madigan**, *AJ* 160:50Z (2020)
Giant-planet Influence on the Collective Gravity of a Primordial Scattered Disk
18. Generozov & **Madigan**, *ApJ* 896: 137G (2020)
The Hills Mechanism and the Galactic Center S-stars
17. Zderic, Collier, Tiongco & **Madigan**, *ApJL* 895L:27Z (2020)
Apsidal Clustering following the Inclination Instability
16. Foote, Generozov & **Madigan**, *ApJ* 890:175F (2020)
Mass Segregation in Eccentric Nuclear Disks: Enhanced Tidal Disruption Event Rates for High Mass Stars
15. Fleisig, Zderic, & **Madigan**, *AJ* 159:20F (2020)
Secular Eccentricity Oscillations in Axisymmetric Disks of Eccentric Orbits
14. Wernke & **Madigan**, *ApJ* 880:42W (2019)
The Effect of General Relativistic Precession on Tidal Disruption Events from Eccentric Nuclear Disks
13. **Madigan**, Zderic, McCourt & Fleisig, *AJ* 156:141M (2018)
On the Dynamics of the Inclination Instability
12. **Madigan**, Halle, Moody, McCourt, Nixon & Wernke, *ApJ* 853:141M (2018)
Dynamical Properties of Eccentric Nuclear Disks: Stability, Longevity, and Implications for Tidal Disruption Rates in Post-Merger Galaxies
11. McCourt, Oh, O’Leary & **Madigan**, *MNRAS* 473:5047 (2018)
A Characteristic Scale for Cold Gas
10. **Madigan**, McCourt, & O’Leary, *MNRAS* 465:2310 (2017)
Using gas clouds to probe the accretion flow around SgrA: G2’s delayed pericenter passage*
9. **Madigan** & McCourt, *MNRAS* 457:89 (2016)
A new inclination instability reshapes Keplerian disks into cones: application to the outer Solar System
8. McCourt & **Madigan**, *MNRAS* 455:2187 (2016)
*Going with the flow: using gas clouds to probe the accretion flow feeding SgrA**
7. McCourt, O’Leary, **Madigan**, & Quataert, *MNRAS* 449:1 (2015)
Magnetized Gas Clouds can Survive Acceleration by a Hot Wind

6. Pfuhl, ..., **Madigan**, *ApJ* 798:111 (2015)
The Galactic Center cloud G2 and its gas streamer
5. **Madigan**, Pfuhl, Levin, Gillessen, Genzel, & Perets, *ApJ* 784:23M (2014)
On the Origin of the B-stars in the Galactic Center
4. **Madigan**, & Levin, *ApJ* 754:42M (2012)
Secular Dynamical Anti-friction
3. **Madigan**, *ASPC* 439:153 (2011)
The Eccentric Disc Instability: Dependency on Background Stellar Cluster
2. **Madigan**, Hopman, & Levin, *ApJ* 738:99M (2011)
Secular Stellar Dynamics near Massive Black Holes
1. **Madigan**, Levin, & Hopman, *ApJ* 697:L44 (2009)
A New Secular Instability of Eccentric Stellar Disks around Supermassive Black Holes, with Application to the Galactic Center

References

Prof. Dr. Andrea Ghez

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