

CONTACT INFORMATION	Center for Cosmology and Particle Physics New York University 4 Washington Place, 505 Meyer Hall New York, NY 10003, USA	Voice: (212) 992-8785 Fax: (212) 995-4016 E-mail: macfadyen@nyu.edu WWW: cosmo.nyu.edu/aim
CURRENT APPOINTMENT	New York University , New York, NY, USA <i>Department of Physics, Center for Cosmology and Particle Physics</i> Associate Professor of Physics, 2013– Assistant Professor of Physics, 2007–2013	
RESEARCH APPOINTMENTS	Harvard University , Cambridge, MA, USA <i>Institute for Theory and Computation, Center for Astrophysics</i> Visiting Scholar, Spring, 2011 Institute for Advanced Study , Princeton, NJ, USA <i>School of Natural Sciences</i> Postdoctoral Member in Astrophysics, 2004–2007 California Institute of Technology , Pasadena, CA, USA <i>Theoretical Astrophysics & Relativity</i> Prize Postdoctoral Fellow, 2001–2004	
EDUCATION	University of California , Santa Cruz, CA <i>Ph. D., Astrophysics, 2000</i> Thesis: “Collapsars: Gamma-Ray Bursts and Asymmetric Supernovae” Advisor: Stan Woosley Columbia University , New York, NY <i>B.A., Astrophysics</i>	
PUBLICATION SUMMARY	SAO/NASA ADS — 70+ research publications, 5500+ citations, 1900+ normalized citations, h-index 35 Google Scholar — 6900+ citations (3000+ since 2012), i10-index 62, h-index 37	
PRESENTATION SUMMARY	90+ Invited and Review Talks at international conferences 50+ Colloquia and seminars	
GRANTS	NSF Division of Astronomical Sciences (AST-1715356; MacFadyen, PI), <i>Collaborative Research: Mergers of Massive Black Holes at the Centers of Galaxies</i> , 2017–2020, \$384,653 NASA Fermi Cycle 6 Theory Grant, “Dynamics and Radiation of Fermi GRB Afterglows” (NNX13AO93G; MacFadyen, PI), 1/2014–1/2016, \$60,000 NASA Astrophysics Theory (NNX11AE05G; MacFadyen, Institutional PI; Haiman (Columbia), PI) <i>The Response of a Circumbinary Disk to a Black Hole Merger</i> , 2011–2015, total: \$580,685, subcontract to NYU: \$191,449	

NSF Division of Astronomical Sciences (AST-1009863; MacFadyen, PI),
Simulating Relativistic Turbulence, 2010–2014, \$400,737

NASA Astrophysics Theory (NNX10AF62G; MacFadyen, PI)
The Dynamics and Afterglow Radiation of Gamma-Ray Bursts, 2010–2013, \$328,500

NASA Chandra Cycle 14 Theory Grant, “Developing a hydrodynamical simulation based gamma-ray burst afterglow fit code” (TM3-14005X; van Eerten (NYU), PI; MacFadyen, Co-I), 12/2012–12/2013, \$80,000

NASA Chandra Cycle 14 Archive Grant, “Using Numerical Simulation-based Models and Late Time Chandra Data to Understand the Jet Breaks of Long Gamma-ray Bursts” (14500581; Zhang (PSU), PI; MacFadyen, Co-I), 9/2012–9/2013, \$75,000

NASA Suzaku Guest Observer – Cycle 5 (09-SUZ509-0018; MacFadyen, Institutional PI & Co-I; Gelfand, PI) *The Origin of the Hard X-Ray and GeV Gamma-Ray Emission of SNR G3046+0.1*, \$23,909, 2010–2011

NASA XMM-Newton Guest Investigator (NASA-06292012-KS; Gelfand (NYUAD), PI; MacFadyen, Lead PI); *What is accelerating particles in SNR G5.7-0.1?*, 9/2012–9/2013, \$57,037

NASA SWIFT Guest Investigator (SWIF03-0000-0060; MacFadyen, PI) *Numerical Simulation of Relativistic Blastwaves*, \$18,000, 2005–2006

NVIDIA Professor Partnership GPU Grant, \$8,000, 2009–2010

RECENT HONORS
AND
FELLOWSHIPS

Visiting Fellow, JILA, University of Colorado, 2017

Iakobachvili Faculty Science Award, 2016

Scialog Fellow, Research Corporation for Scientific Advancement, 2015, 2016

Distinguished Scientific Visitor, Carnegie Observatories, 2014–2015

Visiting Scholar, Harvard University, 2010–2011

Kavli Fellow, National Academy of Sciences, 2007–2009

POPULAR MEDIA

Japan Broadcasting Company NHK, *The Cosmic Front*, 2014: Public television interview on GRBs with my NYU group

National Geographic Magazine, *Cosmic Explosions*, 2007: My NYU research is featured along with full-page graphics of my simulations of GRBs; the article quotes my description of my NYU research on GRBs and supernovae

Science News, 2007-, Several issues have quoted me in interviews concerning my NYU work on GRBs and supernovae regarding other research including, the issues 11/3/07, 3/8/08, 7/18/09

NOVA, PBS, 2001, My research was featured in the NOVA television episode “*Hunt for the Death Star*” for which I was interviewed and my computer simulations are extensively shown

U.S. News & World Report, My research was featured in an article on GRBs and cosmic explosions

Sky & Telescope, My research was featured in an article on GRBs and cosmic explosions

ONLINE
AUDIO & VIDEO
PRESENTATIONS

KITP Rapid Response Workshop: Astrophysics from LIGO's First Black Holes, Santa Barbara, August 12, 2016

<http://online.kitp.ucsb.edu/online/gwaves-m16/macfadyen>

Space Telescope Science Institute: "Mysterious Connection Between Superluminous Supernovae and Gamma-Ray Bursts," May 25, 2016

<https://webcast.stsci.edu/webcast/detail.xhtml;jsessionid=D199D703EC7651770talkid=5088&parent=1>

9th Harvard-Smithsonian Sackler Conference on Theoretical Astrophysics: "The Transient Sky," Cambridge, May 16, 2016

<https://www.youtube.com/watch?v=LEbY2v2cG2Q&feature=youtu.be>

Stony Brook Physics and Astronomy Colloquium, September 15, 2015

http://www.physics.sunysb.edu/Physics/movies/physics/macfadyen_col1091515_ref.mov

Center for Astrophysics (CFA) Colloquium, Harvard, February 5, 2015 (45 min)

<https://www.youtube.com/watch?v=hq7cWhes6Dg>

Harvard ITC Luncheon Talk on Top Heavy Jets, February 5, 2015 (15 min; starts at 38:48)

<https://www.youtube.com/watch?v=sIYZO46qfSA>

Joint NOAO/Steward Colloquium, University of Arizona, October 16, 2014 (46 min)

<http://ua.lecturecast.arizona.edu/Panopto/Pages/Viewer.aspx?id=2a8b309e-cd2f-4c6e-b773-f7b73b8ed32e>

Harvard ITC Luncheon Talk on Binary Black Hole Accretion, April 3, 2014 (12 min; starts at 39:22)

<https://www.youtube.com/watch?v=0iOVVnjZie8&feature=youtu.be>

KITP Conference: Rattle and Shine: Gravitational Wave and Electromagnetic Studies of Compact Binary Mergers, Aug 2, 2012 (35 min)

<http://online.kitp.ucsb.edu/online/chirps-c12/macfadyen>

Royal Society Discussion: New Windows on Transients Across the Universe, April 23, 2012 (30 min, audio only)

<http://downloads.royalsociety.org/audio/DM/DM2012-06/MacFadyen.mp3>

CITA Astrophysics Colloquium, Jan 12, 2012 (67 min)

<http://hosting.epresence.tv/CITA/1/watch/407.aspx>

The 2011 International Summer School on AstroComputing: Computational Explosive Astrophysics, UC Berkeley & LBNL/NERSC, July 18–29, 2011 (25 min each):

#1: http://hipacc.ucsc.edu/Talk_single.php?Tid=131&SerId=9&Aid=9

#2: http://hipacc.ucsc.edu/Talk_single.php?Tid=132&SerId=9&Aid=9

The Future of AstroComputing, San Diego Supercomputing Center, Dec 17, 2010 (11 min)

http://hipacc.ucsc.edu/Talk_single.php?Tid=125&SerId=12&Aid=12

KITP Astro Plasmas Conference, Oct 2, 2009 (30 min)
<http://online.kitp.ucsb.edu/online/astroplasmas-c09/macfadyen>

CFA Colloquium, Harvard University, Sep 3, 2009 (73 min, audio starts at 14:37)
<http://www.cfa.harvard.edu/events/colloquia/fall09.html>

KITP Stellar Death Conference, Aug 21, 2009 (30 min)
<http://online.kitp.ucsb.edu/online/sdeath-c09/macfadyen>

SUPERCOMPUTING NASA High-end Computing SMD-14-4941, 5,066,538 processor-hours (409584 SBUs)
ALLOCATIONS on "Discovery" at NAS, estimated full cost value \$327,618, May 1, 2014 – April 31, 2015

NASA High-end Computing SMD-14-4941, 4,915,205 processor-hours (409584 SBUs)
on "Pleiades" at NAS, estimated full cost value \$327,618, May 1, 2014 – April 31, 2015

NASA High-end Computing SMD-14-4937 7,372,807 processor-hours (614376 SBUs)
on "Pleiades" at NAS, estimated full cost value \$491,828, May 1, 2014 – April 31, 2015

NASA High-end Computing SMD-13-4062, 3,440,646 processor-hours (286709 SBUs)
on "Pleiades" at NAS, estimated full cost value \$229,333, May 1, 2013 – April 31, 2014

NASA High-end Computing SMD-13-4041, 3,440,646 processor-hours (286709 SBUs)
on "Pleiades" at NAS, estimated full cost value \$229,333, May 1, 2013 – April 31, 2014

NASA High-end Computing SMD-12-3184, 9,600,384 processor-hours (800000 SBUs)
on "Pleiades" at NAS, estimated full cost value \$640,000, May 1, 2012 – April 31, 2013

NASA High-end Computing SMD-12-2969, 6,000,240 processor-hours (500000 SBUs)
on "Pleiades" at NAS, estimated full cost value \$400,000, May 1, 2012 – April 31, 2013

NASA High-end Computing SMD-11-2326, 11,673,600 processor-hours (534678 SBUs)
on "Pleiades" at NAS, estimated full cost value \$427,742, May 1, 2011 – April 31, 2012

NASA High-end Computing SMD-11-2163, 10,000,000 processor-hours (458100 SBUs)
on "Pleiades" at NAS, estimated full cost value \$366,480, May 1, 2011 – April 31, 2012

EDUCATIONAL Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA
APPOINTMENTS *Education Department*
Research Associate for Educational Projects, 1988–1992

New York City Public Schools, New York, NY, USA
Thomas Edison High School
High School Science Teacher, 1988

TEACHING Computational Physics (core graduate course) G85.2000.001, Fall, 2007—2011, 2016
Computational Physics (undergraduate course) V85.0210001 (cross-listed with G85.2000.001),
Fall 2008, Fall 2010, Fall, 2011, Fall, 2013
High Energy Astrophysics (graduate course) G85.2053.001, Spring, 2009, Spring, 2014
Physics II (undergraduate course, enrollment: 50 students), Spring, 2012, 2013

General Physics I (undergraduate course, enrollment: 550 students), Fall, 2012

Electromagnetism (required graduate course) G85.2005.001, Spring, 2010

STUDENT AND
POSTDOC
ADVISING

Ph. D. thesis advisor to physics graduate students Jonathan Zrake, Paul Duffell, Geoffrey Ryan, Yike Tang, Xiaoyi Xie, Yiyang Wu

Ph. D. Thesis Advisor to Dr. Jonathan Zrake, Ph.D. 2013, next position: KIPAC post-doctoral fellow, Stanford University

Ph. D. Thesis Advisor to Dr. Paul Duffell, Ph.D. 2014, next position: TAC postdoctoral fellow, UC Berkeley

Ph. D. Thesis Advisor to Dr. Geoffrey Ryan, Ph.D. 2017, next position: JSI postdoctoral fellow, University of Maryland

Advisor to graduate students Trey Jensen, Chris Tiede for summer research projects

Advisor to undergraduate students Ilana Gat, Joyce Laine, Bezia Lederman, Richard Zhang, George Wong, Randall Kayser, Niclas Wahlstrom

Honors thesis advisor to Ilana Gat, winner of Borgmann thesis prize, 2013 and NSF graduate fellowship to Caltech, 2013

Honors thesis committee member for Iraj Eshghi, 2017

Advisor to postdoctoral researchers Dr. Hendrik van Eerten (2010–2013) now Lecturer (Assistant Professor) at University of Bath, UK, Dr. Brian Farris (2012–2015) now data scientist at Capitol One Labs, Dr. Takamitsu Tanaka (2014–2015) next position: Research Assistant Professor SUNY Stony Brook University

Advisor to postdoctoral fellows Dr. Weiqun Zhang (2007–2010; next position: Staff Scientist, Lawrence Berkeley National Laboratory) and Dr. Joseph Gelfand (2007–2010 NSF fellow; next position: Assistant Professor of Physics, NYU Abu Dhabi)

NYU SERVICE

NYU Institutional Representative, Universities Space Research Association (USRA) Council of Institutions, 2016–

Ph. D. thesis committee member: Sebastian Pueblas (2008), Subinoy Das (2008), Rahman Rakbir (2009), Ronnie Jansen (2009), Ilias Cholis (2010), Lisa Goodenough (2010), Ronnie Jansson (2010), Tao Jiang (September, 2012), Lisa Dixon (December 2012), Jonathan Zrake (2013), George Lewis (2013), Tao Jiang (2013), Paul Duffell (2014), Jia Liu (2014), Craig Lage (2014), Hongliang Liu (2016), Yuqian Liu (2017)

Prelim committee: Tao Jiang, Rob Morris, George Lewis, Jonathan Zrake, Paul Duffell, Ben Roig, Deepak Khuruna, Craig Lage, Danielle Pina, Ricardo Neves, Hongliang Liu, Yuqian Liu

Graduate Studies Committee, Physics Department, 2012-13

Committee on Undergraduate Curriculum, Faculty of Arts and Sciences, Spring 2010

Physics department graduate student admissions committee, 2008–2009, 2011-2012

NYU-Abu Dhabi faculty recruitment committee

Organizer, Joint Physics–Courant High Reynolds Number Fluid Flow (HiREFF) seminars, 2010

Astrophysics seminar organizer, 2007–2008

Big Apple Astrophysics Colloquium co-organizer, Spring 2008, Fall 2015

Physics department computing and library committees, 2007-2015

Outreach speaker for high school students (e.g., John Jay High School math club, May, 2010)

EXTERNAL SERVICE Vice President, Board of Trustees, AMIAS, Institute for Advanced Study, Princeton, 2013–

Member, Board of Trustees, AMIAS, Institute for Advanced Study, Princeton, 2013–2015, 2016–2018

Advisory Panel, Simons Foundation, Center for Computational Astrophysics, 2015

Reviewer for National Science Foundation proposals, 2012

Reviewer and review panel chair for NASA proposals, 2010, 2011, 2014

Panelist for Senior Review of NASA, 2016

Reviewer for Israel Science Foundation proposals, 2012

Reviewer for Natural Sciences and Engineering Research Council of Canada (NSERC) proposals, 2011, 2012

Reviewer for Research Foundation Flanders (FWO), Belgium, 2011

Reviewer for Superior Council of the National Fund for Scientific & Technological Development (FONDECYT), Chile, 2009

Scientific Organizer, Chinese-American Kavli Frontiers of Science Symposia, National Academy of Sciences, 2008 & 2009. Session organizer: Exoplanets (2008), Cyberinfrastructure/LHC Data Challenge (2009), Gamma-Ray Bursts (2009)

External Ph. D. committee member for Adam Jacobs, Stony Brook University (8/2016)

External Ph. D. committee member for Daniel D’Orazio, Columbia University (6/2016)

External Ph. D. committee member and chair for Roman Shcherbakov, Harvard University (4/2011)

External Ph. D. committee member for Alexander Tchekhovskoy, Harvard University (5/2010)

Scientific organizer for inaugural Tri-State Astronomy Meeting for astronomers at public and private colleges and universities in the New York, New Jersey, & Con-

necticut area, October, 2008

Scientific organizer for International Astronomical Union (IAU) Symposium No. 250, "Massive Stars as Cosmic Engines," December, 2007

Scientific organizer for GRBMAG14 meeting, Bormio, Italy, January 20–24, 2014

Co-adviser with Zoltan Haiman (Columbia) to Lia Coralles, Dan D’Orazio and Andrea Derdzinski, Ph. D. students in astronomy at Columbia

Referee for Astrophysical Journal, Monthly Notices of the Royal Astronomical Society and Nature

CONFERENCES AND
WORKSHOPS

1. "And then there was Light: Electromagnetic Signatures of Stellar Mass Binary Black Hole Mergers," Lorentz Center, Leiden, September 4–8, 2017
2. "Astrophysics of Gravitational Radiation Sources and Multimessenger Astronomy in the Era of LIGO Detections" Aspen Center for Physics, July 16–August 7, 2017
3. The Accreting Universe, T. D. Lee Institute, Shanghai, July 12–14, 2017, invited talk (declined)
4. "The disc migration issue: from protoplanets to supermassive black holes," Kavli Institute, Cambridge University, May 22–24, 2017, invited talk
5. LSST Detection of Optical Counterparts of Gravitational Waves, Columbia University, May 12–13, 2017
6. Phenomena, Physics, and Puzzles Of Massive Stars and their Explosive Outcomes, KITP, Santa Barbara, March 20–24, 2017, invited talk (declined)
7. Black Hole Network Meeting on Supermassive Black Hole Binaries, Simons Center for Computational Astrophysics, March 3, 2017, co-organizer
8. "Time-Domain Astrophysics: Incorporating Observations, Theory, and Computation in the American Northeast," Radcliffe Institute, Cambridge, November 17–18, 2016
9. "Scialog: Time Domain Astrophysics: Stars and Explosions," Tucson, AZ, October 13–16, 2016, Participating Fellow
10. "Universal Accretion: The Physics of Mass Accretion on All Scales and in Diverse Environments," Aspen Center for Physics, August 21–September 4, 2016
11. "KITP Rapid Response Workshop: Astrophysics from LIGO’s First Black Holes," Kavli Institute for Theoretical Physics, Santa Barbara, August 1–12, 2016
12. "Emergence, Evolution and Effects of Black Holes in the Universe: The Next 50 Years of Black Hole Physics," Aspen Center for Physics, July 3–July 10, 2016
13. "COSPAR 2016", Istanbul, Turkey, July 30– August 4, 2016, Invited Talk (meeting cancelled)
14. "The Mysterious Connection Between Superluminous Supernovae and Gamma-Ray Bursts", Space Telescope Science Institute, May 23–25, 2016, Invited talk
15. "9th Sackler Conference in Theoretical Astrophysics: The Transient Sky," Harvard, May 16–19, 2016, Invited Talk
16. "Relativistic Plasma Astrophysics", Purdue University, May 9–11, 2016, Invited Talk

17. "GR@100++", Princeton Center for Theoretical Science, April 7–9, 2016, Invited Talk
18. Mayacamas 2016: Fundamentals of Astrophysics, Calistoga, CA, March 30–April 3, 2015, Invited Talk
19. "Rapid Fire Workshop on Compact Binary Mergers", Columbia Center for Theoretical Physics, February 21, 2016, Invited Talk
20. "Physics of Extreme Energy Release, as Illustrated by PWNe and GRBs," ISSI Workshop, Bern, Switzerland, November 21–28, 2015, Invited Review Talk
21. "Scialog: Time Domain Astrophysics: Stars and Explosions," Tucson, AZ, October 22–25, 2015, Participating Fellow
22. "X-Ray Vision: Probing the Universe in Depth and Detail with the X-Ray Surveyor," Washington, DC, October 6–8, 2015, Invited Talk
23. "Particle Astrophysics and Cosmology, Including Fundamental Interactions (PACIFIC - 2015)," Mo'orea, French Polynesia, September 12–19, 2015, Invited Talk
24. "Fireworks Meeting," Liverpool, England, June, 22–26, 2015 (declined)
25. "Gamma-Ray Bursts: a tool to explore the young Universe," International Space Science Institute in Beijing (ISSI-BJ), Beijing, China, April 13–17, 2015, Invited Review (declined)
26. Mayacamas 2015: Fundamentals of Astrophysics, Calistoga, CA, April 1–5, 2015, Invited Participant
27. "Black Holes in Dense Star Clusters," Aspen Center for Physics, January 17–22, 2015, Contributed Talk
28. "SWIFT 10 Years of Discovery," La Sapienza University, Rome, Italy, December 2–5, 2014, Contributed Talk
29. "Ioffe Workshop on GRBs and other Explosive Transients: Twenty Years of Konus-Wind Experiment," St. Petersburg, Russia, September 22–26, 2014, Invited Talk
30. "The r-process: Status & Challenges," Institute for Nuclear Theory, University of Washington, Seattle, July 28–August 1, 2014, Invited Review
31. UNSOLVED PROBLEMS in Astrophysics and Cosmology, Budapest, Hungary, June 29–July 5, 2014, Invited Talk (declined)
32. "Fast and Furious: Understanding Exotic Astrophysical Transients," Aspen Center for Physics, June 16–23, 2014
33. "Gamma-Ray Bursts in the Multi-messenger Era," Paris, France, June 16–19, 2014, Invited Talk (declined)
34. "Ultra-Compact Binaries as Laboratories for Fundamental Physics," Aspen Center for Physics, June 8–15, 2014
35. Workshop on Relativistic Plasma Astrophysics, Purdue University, May 11–15, 2014, Invited Talk
36. Mayacamas 2014: Fundamentals of Astrophysics, Calistoga, CA, April 16–20, 2014, Invited Lecture
37. ISSI workshop on THE STRONGEST MAGNETIC FIELDS IN THE UNIVERSE, Bern, Switzerland, February 3–7, 2014, Invited Talk (declined)
38. Gamma-ray Burst - Magnetar Thinkshop (GRBMAG14), Bormio, Italy, January 20–24, 2014, Scientific Organizer, Session Chair and Discussion Leader
39. Texas Relativistic Astrophysics Meeting, Dallas, Texas, Contributed Talk (cancelled)

40. Supernovae and Gamma-Ray Bursts in Kyoto 2013, Nov 11–15, 2013, Kyoto, Japan, Invited Talk
41. Future Directions of Relativistic Jets, Aug 20–Sep 2, Skokloster, Sweden, Invited Talk, session chair
42. American Physical Society (APS) Meeting, Denver, April 13–16, 2013, Invited Talk, session chair
43. “Joining the Electromagnetic and Gravitational Wave Skies,” American Astronomical Society Meeting, Long Beach, CA, Jan 6–10, 2013, Invited Talk/Panelist
44. Gravitational Wave and Electromagnetic Studies of Compact Binary Mergers, Kavli Institute for Theoretical Physics, Santa Barbara, July 30 – August 3, 2012, Invited Talk and panelist
45. Fermi/Swift Gamma-Ray Bursts 2012 Conference, Munich, May 7–11, 2012, Invited Review Talk
46. Connecting the Electromagnetic and Gravitational Wave Skies in the Era of Advanced LIGO, Princeton Center for Theoretical Science, April 30–May 4, 2012, Invited Discussion Leader and Speaker
47. Kavli Royal Society Meeting: Interpreting Signals from Astrophysical Transient Experiments, Chicheley Hall, England, April 25–26, 2012, Invited Participant
48. 2012 Royal Society Discussion: New Windows on Transients Across the Universe, London, April 23–24, 2012, Invited Talk and panelist
49. International Astronomical Union, IAU Symposium 279: Death of Massive Stars: Gamma-Ray Bursts and Supernovae, Nikko, Japan, March 12–16, 2012, Invited Talk
50. Time Domain Astrophysics with Swift, Clemson, October 24–26, 2011, Invited Talk
51. The 2011 International Summer School on Astro-Computing: Computational Explosive Astrophysics, UC Berkeley & LBNL/NERSC, July 18–29, 2011, Invited Lecturer
52. The Origin of the Elements: A Modern Perspective, European Center for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy, May 16–20, 2011, Invited Talk
53. GRBs as Probes: From the Progenitor’s Environment to the High Redshift Universe, Como, Italy, May 16–20, 2011, Invited Review Talk
54. Compressible Turbulence at the Intersection of Astrophysics and Engineering, Center for Nonlinear Studies & Los Alamos National Laboratory, Santa Fe, NM, April 25–28, 2011, Invited Talk
55. The Future of AstroComputing, San Diego Supercomputing Center, December 16–17, 2010, Invited Talk
56. Fermi Space Telescope Science Workshop, New York University, December 1, 2010, Invited Talk
57. Gamma Ray Bursts 2010, Annapolis, November 1–4, 2010, Invited Talk
58. Accretion and Outflow in Black Hole Systems, Kathmandu, Nepal, October 11–15, 2010, Invited Talk (declined)
59. 19th International Conference on General Relativity and Gravitation (GR19), Mexico City, July 5–9, 2010, Invited Talk: “Magnetized Relativistic Flows”

60. Deciphering the Ancient Universe with Gamma Ray Bursts, Kyoto, Japan, April 19–23, 2010, Invited Talk: “Afterglow Lightcurves from High Resolution Multi-dimensional Simulations”
61. Computational Relativistic Astrophysics: Frontiers of MHD, Princeton Center for Theoretical Science, Princeton University, January 13–16, 2010, Invited Talk (declined)
62. 215th meeting of the American Astronomical Association (AAS), Washington D.C., January 2–8, 2010, Invited Talk: Multi-Band Light Curves from Two-Dimensional Simulations of Gamma-Ray Burst Afterglows
63. Gravitational Wave Bursts: Astrophysics, Data Analysis and Numerical Relativity, Chichen-Itza, Mexico, December 9–11, 2009, Invited Talk
64. Computational General Relativistic Astrophysics, Princeton Center for Theoretical Science, Princeton University, October 22–24, 2009, Invited Talk: “GRB Hydrodynamics”
65. KITP Conference: Nonlinear Processes in Astrophysical Plasmas: Particle Acceleration, Magnetic Field Amplification, and Radiation Signatures, Kavli Institute for Theoretical Physics, Santa Barbara, September 28–October 2, 2009, Invited Talk: “Magnetic Field Amplification by Macroscopic Turbulence”
66. The Shocking Universe: Gamma Ray Bursts and High Energy Shock Phenomena in the Universe, Venice, Italy, September 14–18, 2009, Invited Talk: “GRB Afterglow Lightcurves from Multi-Dimensional Simulations”
67. A Festival of Cosmic Explosions, California Institute of Technology, August 21–23, 2009, Invited Talk: “Jets Play a Role in Supernova Explosions”
68. KITP Conference: Stellar Death and Supernovae, Kavli Institute for Theoretical Physics, Santa Barbara, August 17–21, 2009, Invited Review Talk: “Collapsar Model”
69. Marcel Grossman Meeting 12, Paris, France, July 12–18, 2009, Invited Review Talk, GRB1 session: “Hydrodynamics of GRB Outflows”
70. Marcel Grossman Meeting 12, Paris, France, July 12–18, 2009, Invited Talk, GRB3 session: “Relativistic Blastwaves”
71. Marcel Grossman Meeting 12, Paris, France, July 12–18, 2009, Invited Talk, ANM8 session: “Magnetic Field Amplification in Turbulent Shear Flows”
72. Physics of Relativistic Flows: An Observational View, NORDITA, Albanova Center, Stockholm, Sweden, June 2, 2009, Invited Talk: “The Dynamics and Afterglow Radiation of Gamma-Ray Bursts”
73. “GRB Physics” Kavli Institute for Astronomy and Astrophysics (KIAA), Peking University, Beijing, China, May 4 – June 19, 2009 (declined)
74. Frontiers in Space Astrophysics: Neutron Stars & Gamma Ray Bursts, Cairo & Alexandria, Egypt, March 30–April 4, 2009, Invited Review Talk: “New Developments & Scenarios for Long Bursts: Hydrodynamics of Collapsar Jets”
75. 5th UC Irvine Center for Cosmology Workshop: Intermediate-Mass Black Holes: from First Light to Galactic Nuclei, Irvine, April 1–3, 2009 (declined)
76. 2008 Fireworks Meeting: First Results from Wide-Field Surveys, The Weizmann Institute, Rehovot, Israel, December 14–21, 2008, Invited Talk
77. Texas Symposium on Relativistic Astrophysics, Vancouver, Canada, December 8–12, 2008, Invited Talk: “Advances in GRB Simulations: Magnetic Field Amplification by 3D Relativistic Shear Instabilities”

78. *Frontiers in Numerical Gravitational Astrophysics*, Second Course of the International School on Astrophysical Relativity "John Archibald Wheeler", Erice, Italy, June 27–July 5, 2008, Two Invited Lectures on "Special Relativistic Hydrodynamics"
79. American Physical Society Meeting, St. Louis, April, 2008, Invited Talk: "Gamma Ray Bursts from Massive Stars"
80. International Astronomical Union 250th Meeting, Kuai, Hawaii, December, 2007, Invited Review Talk: "Long Gamma-Ray Bursts – Core Collapse Supernova Connection"
81. *Supernova 1987A: 20 Years After – Supernovae and Gamma-Ray Bursters*, Aspen Center for Physics, February 18–25, 2007, Invited Review Talk: "Very Asymmetric Supernovae"
82. *SWIFT and GRBs: Unveiling the Relativistic Universe*, Venice, Italy, June 5–9, 2006, Invited Talk and panelist
83. *GRBs in the SWIFT Era*, Washington D.C., November 29–December 2, 2005
84. American Physical Society, 47th Meeting of the Division of Plasma Physics, Denver, October 24–28, 2005, Invited Talk: "Stellar Collapse and Explosion: Relativistic AMR Simulations"
85. *Grand Challenge Problems in Computational Astrophysics*, Institute for Pure & Applied Mathematics, University of California Los Angeles, May 3, 2005, Invited Talk
86. *22nd Texas Symposium on Relativistic Astrophysics*, Stanford, December 13–17, 2004, Invited Talk
87. *Stanford Linear Accelerator Center (SLAC) Workshop on Plasma Astrophysics*, Invited Talk, August 16, 2004
88. *The Supernova–Gamma Ray Burst Connection*, Institute for Nuclear Theory, University of Washington, Seattle, July 12–14, 2004, Invited Talk
89. *The Fate of the Most Massive Stars*, Grand Teton, Wyoming, May 23–28, 2004, Invited Talk
90. *American Astronomical Society 203rd Meeting: Gamma-Ray Bursts*, Atlanta, January 4–8, 2004, Invited Talk
91. *Center for Gravitational Wave Physics, Penn State, Second Gravitational Wave Phenomenology Workshop*, Nov 6–8, 2003, Invited Review Talk
92. *Aspen Center for Physics: "The Nuclear Physics of Core Collapse Supernovae," and "Magnetic Reconnection,"* Aspen, Colorado, May–June, 2003, Invited Talk
93. *The Restless High-Energy Universe - A Symposium on X-Ray Astronomy*, Royal Academy of Arts and Sciences of the Netherlands, Amsterdam, May 5–8, 2003, Invited Talk
94. *International Astronomical Union (IAU) Colloquium 192 "Supernovae,"* Valencia, Spain, April 22–26, 2003, Invited Review Talk
95. *ESO/MPA/MPE Workshop "From Twilight to Highlight: The Physics of Supernova Explosions,"* Garching, Germany, July 30, 2002, Invited Talk
96. *American Astronomical Society, Summer Meeting, Core-Collapse of Massive Stars: Supernovae and Gamma-Ray Bursts*, Albuquerque, NM, June, 2002, Invited Talk
97. *American Physical Society, Spring Meeting with the High Energy Astrophysics Division (HEAD)*, Albuquerque, NM, April, 2002, Invited Talk

98. Aspen Center for Physics: "Gamma-Ray Bursts In The Afterglow Era," Aspen, Colorado, June, 2001, Invited Talk
99. American Astronomical Society 198th Meeting, Pasadena, California, June, 2001, "Gamma-Ray Bursts: A Mystery and a Tool," Invited Talk
100. The 18th Jerusalem Winter School in Theoretical Physics: "COSMIC EXPLOSIONS Gamma-Ray Bursts & Related Phenomena," Hebrew University of Jerusalem, January, 2001, Invited Review Talk
101. Explosive Phenomena in Astrophysical Compact Objects, Korea Institute for Advanced Studies, Seoul, Korea, May, 2000, Invited Talk
102. Fifth Huntsville Gamma-Ray Burst Symposium, Huntsville, Alabama, Oct. 18–22, 1999
103. 10th Annual October Maryland Astrophysics Conference: "Cosmic Explosions!," Oct 11–13, 1999, Contributed Talk
104. ESO Workshop on Black Holes in Binaries and Galactic Nuclei: "Diagnostics, Demography and Formation, In Honour of Professor Riccardo Giacconi," Munich, Germany, September, 1999, Contributed Talk
105. IAU (International Astronomical Union) Symposium 195: "Highly Energetic Physical Processes and Mechanisms for Emissions from Astrophysical Plasmas," Montana State University, July 1999, Contributed Talk
106. "Gamma-Ray Bursts and their Afterglows", Institute for Theoretical Physics, Santa Barbara, March 15–18, 1999
107. American Astronomical Society 193rd Meeting, Austin, Texas, January, 1999, "Collapsars – Gamma Ray Bursts and Explosions in 'Failed Supernovae' "
108. American Astronomical Society 192nd Meeting, San Diego, California, June, 1998, "The Collapsar Model for Gamma Ray Bursts - Two-Dimensional Calculations"
109. Ringberg Castle Meeting on Neutrino and Gamma-Ray Astrophysics, Tegernsee, Germany, September, 1997

COLLOQUIA &
SEMINARS

1. University of Amsterdam, Astronomy Colloquium, November 23, 2016
2. Princeton University and Institute for Advanced Study Joint Astrophysics Colloquium, April 26, 2016
3. Stony Brook University, Physics Colloquium, September 15, 2015
4. University of Chicago, Astronomy Colloquium, April 29, 2015
5. UC Santa Cruz, FLASH seminar, April 17, 2015
6. Stanford University, KIPAC Colloquium, April 16, 2015
7. UC Berkeley, Theoretical Astrophysics Center Seminar, April 13, 2015
8. Harvard University, Center for Astrophysics Colloquium, February 5, 2015
9. Capodimonte Observatory, Colloquium, Naples, Italy, December 10, 2014
10. Princeton University, Gravity Group Seminar, December 5, 2014 (postponed)
11. Carnegie Observatories, Colloquium, Pasadena, November 6, 2014
12. Stony Brook University, Astrophysics Seminar, October 29, 2014
13. University of Arizona, Joint NOAO/Seward Colloquium, October 16, 2014
14. Northwestern University, CIERA seminar, October 7, 2014
15. Columbia University, Physics Colloquium, September 15, 2014

16. Oskar Klein Center Colloquium, Stockholm, Sweden, May 27, 2014
17. Harvard University, ITC Colloquium, April 3, 2014
18. University of Maryland, JSI Colloquium, February 3, 2014
19. University of Colorado, Astronomy Colloquium, September 24, 2012
20. Yale University, Astronomy Colloquium, September 6, 2012
21. Institute for Advanced Study, Princeton, Astrophysics Colloquium, May 22, 2012
22. Penn State University, Astronomy Colloquium, January, 18, 2012
23. Canadian Institute for Theoretical Astrophysics (CITA), University of Toronto, Astrophysics Seminar, January 12, 2012
24. Queens College, Physics Colloquium, (TBD)
25. Purdue University, Physics Colloquium, April 7, 2011
26. Harvard University, ITC Seminar, February 8, 2011
27. University of Minnesota, Astronomy Colloquium, Oct 8, 2010
28. Institute for Advanced Study, Princeton, Astrophysics Seminar, May 13, 2010
29. Stony Brook University, Astrophysics Seminar, April 16, 2010
30. Goddard Institute for Space Studies, Astrophysics Seminar, March 12, 2010
31. American Museum of Natural History, Astrophysics Seminar, February 2, 2010
32. New York University, Physics Colloquium, January 28, 2010
33. Nordic Institute for Theoretical Physics, Stockholm, Sweden, NORDITA Seminar, June 11, 2009
34. Harvard University, Center for Astrophysics Colloquium, September 3, 2009
35. Columbia University, ISCAP Seminar, Institute for Strings, Cosmology and Astroparticle Physics, February 27, 2009
36. Harvard University, ITC Colloquium, December 11, 2008
37. University of Delaware, Physics Colloquium, March, 2008
38. Columbia University, Astronomy Colloquium, April 25, 2007.
39. University of Wisconsin, Madison, Astronomy Colloquium, February, 2006
40. University of Montreal, Physics Colloquium, March, 2006
41. McGill University, Astrophysics Seminar, November, 2005
42. Space Telescope Science Institute, Colloquium, May, 2005
43. National Radio Astronomy Observatory (NRAO) & University of Virginia, Joint Colloquium, December 6, 2004
44. University of Rochester, Astronomy Colloquium, October 11, 2004
45. National Radio Astronomy Observatory (NRAO) Colloquium, Socorro, New Mexico, April 4, 2004
46. Montana State University, Physics Colloquium, March, 2004
47. University of Illinois Urbana-Champaign, Theoretical Astrophysics & General Relativity Seminar, October 29, 2003
48. University of California, Berkeley, Theoretical Astrophysics Seminar, December 3, 2003
49. University of Arizona, Theoretical Astrophysics Colloquium, September 22, 2003
50. Duke University/North Carolina State/University of North Carolina, Joint Astrophysics Colloquium, April, 2003

51. Canadian Institute for Theoretical Astrophysics, Seminar, October 21, 2002
52. California Institute of Technology, Theoretical Astrophysics and Relativity Seminar, November, 2001
53. University of California, Santa Cruz, Astronomy and Astrophysics Colloquium, September, 2000

PUBLICATIONS

1. Turner, N. J. J., & MacFadyen, A., A search for stars in the intergalactic neutral hydrogen cloud HI 1225+01: the star formation threshold in galaxies, *Monthly Notices of the Royal Astronomical Society*, **285**, 125 (1997)
2. MacFadyen, A. I., & Woosley, S. E., Collapsars: Gamma-Ray Bursts and Explosions in “Failed Supernovae”, *Astrophysical Journal*, **524**, 262 (1999)
3. Woosley, S. E., & MacFadyen, A. I., Central engines for gamma-ray bursts, *A&AS*, **138**, 499 (1999)
4. Woosley, S.; MacFadyen, A. I.; Heger, A., Collapsars, Gamma-Ray Bursts and Supernovae, *Supernovae and Gamma-Ray Bursts* (1999)
5. Aloy, M. A., Müller, E., Ibáñez, J. M., Martí, J. M., & MacFadyen, A., Relativistic Jets from Collapsars, *Astrophysical Journal*, **531**, L119 (2000)
6. Woosley, S. E., & MacFadyen, A. I., Gamma-ray bursts, supernovae, and SN 1998bw., *Memorie della Societa Astronomica Italiana*, **71**, 357 (2000)
7. Hartmann, D. H., & MacFadyen, A. I., Hypernovae, Collapsars, and Gamma-Ray Bursts, *Nuclear Physics B*, **80**, 135 (2000)
8. MacFadyen, A. I., Woosley, S. E., & Heger, A., Supernovae, Jets, and Collapsars, *Astrophysical Journal*, **550**, 410 (2001)
9. Kobayashi, S., Ryde, F., & MacFadyen, A., Luminosity and Variability of Collimated Gamma-Ray Bursts, *Astrophysical Journal*, **577**, 302 (2002)
10. Ramirez-Ruiz, E., MacFadyen, A. I., & Lazzati, D., Precursors and Electron-Positron Pair Loading from Erupting Fireballs, *Monthly Notices of the Royal Astronomical Society*, **331**, 197 (2002)
11. Zhang, W., Woosley, S. E., & MacFadyen, A. I., Relativistic Jets in Collapsars, *Astrophysical Journal*, **586**, 356 (2003)
12. Proga, D., MacFadyen, A. I., Armitage, P. J., & Begelman, M. C., Axisymmetric Magnetohydrodynamic Simulations of the Collapsar Model for Gamma-Ray Bursts, *Astrophysical Journal*, **599**, L5 (2003)
13. MacFadyen, A. I., *Supernova Explosions from Accretion Disk Winds, From Twilight to Highlight: The Physics of Supernovae*, 97 (2003)
14. MacFadyen, A. I., *Collapsar Disks and Winds, Gamma-Ray Burst and Afterglow Astronomy 2001: A Workshop Celebrating the First Year of the HETE Mission*, **662**, 202 (2003)
15. MacFadyen, A., *Long Gamma-Ray Bursts, Science*, **303**, 5654 (2004)
16. Fox, D. B., Frail, D. A., Price, P. A., Kulkarni, S. R., Berger, E., et al., The afterglow of GRB 050709 and the nature of the short-hard γ -ray bursts, *Nature*, **437**, 845 (2005)
17. Soderberg, A. M. et al., An HST Search for Supernovae Accompanying X-Ray Flashes, *Astrophysical Journal*, **627**, 877 (2005)
18. MacFadyen, A. I., Ramirez-Ruiz, E., & Zhang, W., X-ray flares following short gamma-ray bursts from shock heating of binary stellar companions, *arXiv:astro-ph/0510192* (2005)

19. Gal-Yam, A. et al., A novel explosive process is required for the γ -ray burst GRB 060614, *Nature*, **444**, 1053 (2006)
20. Zhang, W., Woosley, S. E., & MacFadyen, A. I., Gamma-ray bursts: nature's brightest explosions, *Journal of Physics Conference Series*, **46**, 403 (2006)
21. Uzdensky, D. A., & MacFadyen, A. I., Stellar Explosions by Magnetic Towers, *Astrophysical Journal*, **647**, 1192 (2006)
22. Soderberg, A. M. et al., An HST Study of the Supernovae Accompanying GRB 040924 and GRB 041006, *Astrophysical Journal*, **636**, 391 (2006)
23. Zhang, W., & MacFadyen, A. I., RAM: A Relativistic Adaptive Mesh Refinement Hydrodynamics Code, *Astrophysical Journal Supplement Series*, **164**, 255 (2006)
24. Uzdensky, D. A., & MacFadyen, A. I., Magnetar-Driven Magnetic Tower as a Model for Gamma-Ray Bursts and Asymmetric Supernovae, *Astrophysical Journal*, **669**, 546 (2007)
25. Soderberg, A. M. et al., A Spectacular Radio Flare from XRF 050416a at 40 Days and Implications for the Nature of X-Ray Flashes, *Astrophysical Journal*, **661**, 982 (2007)
26. Uzdensky, D. A., & MacFadyen, A. I., Magnetically dominated jets inside collapsing stars as a model for gamma-ray bursts and supernova explosions, *Physics of Plasmas*, **14**, 056506 (2007)
27. MacFadyen, A. I., & Milosavljević, M., An Eccentric Circumbinary Accretion Disk and the Detection of Binary Massive Black Holes, *Astrophysical Journal*, **672**, 83 (2008)
28. Goodman, J., & MacFadyen, A., Ultra-relativistic geometrical shock dynamics and vorticity, *Journal of Fluid Mechanics*, **604**, 325 (2008)
29. Budnik, R., Katz, B., MacFadyen, A., & Waxman, E., Cosmic Rays from Transrelativistic Supernovae, *Astrophysical Journal*, **673**, 928 (2008)
30. Zhang, W., & MacFadyen, A., The Dynamics and Afterglow Radiation of Gamma-Ray Bursts. I. Constant Density Medium, *Astrophysical Journal*, **698**, 1261 (2009)
31. Zhang, W., MacFadyen, A., & Wang, P., Three-Dimensional Relativistic Magnetohydrodynamic Simulations of the Kelvin-Helmholtz Instability: Magnetic Field Amplification by a Turbulent Dynamo, *Astrophysical Journal*, **692**, L40 (2009)
32. Corrales, L. R., Haiman, Z., & MacFadyen, A., Hydrodynamical Response of a Circumbinary Gas Disk to Black Hole Recoil and Mass Loss, *Monthly Notices of the Royal Astronomical Society*, **404**, 947 (2010)
33. Perna, R. & MacFadyen, A., Flare-less long Gamma-ray Bursts and the properties of their massive star progenitors, *Astrophysical Journal*, **710**, L103-106 (2010)
34. Ramirez-Ruiz, E., & MacFadyen, A. I., The Hydrodynamics of Gamma-Ray Burst Remnants, *Astrophysical Journal*, **716**, 1028 (2010)
35. van Eerten, H., Zhang, W. & MacFadyen, A., Off-Axis Gamma-Ray Burst Afterglow Modeling Based On A Two-Dimensional Axisymmetric Hydrodynamics Simulation, *Astrophysical Journal*, **722**, 235 (2010)
36. Duffell, P. C., & MacFadyen, A. I., TESS: A Relativistic Hydrodynamics Code on a Moving Voronoi Mesh, *Astrophysical Journal Supplement*, **197**, 15 (2011)
37. van Eerten, H. J., & MacFadyen, A. I., Synthetic Off-axis Light Curves for Low-energy Gamma-Ray Bursts, *Astrophysical Journal Letters*, **733**, L37 (2011)

38. van Eerten, H. J., & MacFadyen, A. I., Observational implications of gamma-ray burst afterglow jet simulations and numerical light curve calculations, *Astrophysical Journal*, **751**, 155 (2012)
39. Zrake, J., & MacFadyen, A., Numerical Simulations of Driven Relativistic MHD Turbulence, *Astrophysical Journal*, **744**, 32 (2012)
40. Sari, R., Bode, N., Yalinewich, A., & MacFadyen, A., Slightly Two or Three Dimensional Self-Similar Solutions, *Physics of Fluids*, **24**, 087102 (2012)
41. van Eerten, H. J., van der Horst, A. J., & MacFadyen, A. I., Gamma-ray burst afterglow broadband fitting based directly on hydrodynamics simulations, *Astrophysical Journal*, **749**, 44 (2012)
42. van Eerten, H. J., & MacFadyen, A. I., Gamma-ray burst afterglow scaling relations for the full blast wave evolution, *Astrophysical Journal Letters*, **747**, L30 (2012)
43. Duffell, P. C., & MacFadyen, A. I., Global Calculations of Density Waves and Gap Formation in Protoplanetary Disks using a Moving Mesh, *Astrophysical Journal*, **755**, 7 (2012)
44. D’Orazio, D., Haiman, Z., & MacFadyen, A. I., Accretion into the Central Cavity of a Circumbinary Disk, *Monthly Notices of the Royal Astronomical Society* **436**, 2997 (2013)
45. van Eerten, H. J., & MacFadyen, A. I., Gamma-Ray Burst Afterglow Light Curves from a Lorentz-Boosted Simulation Frame and the Shape of the Jet Break, *Astrophysical Journal*, **767**, 141 (2013)
46. Zrake, J. & MacFadyen, A., Spectral and Intermittency Properties of Relativistic Turbulence, *Astrophysical Journal Letters*, **763**, L12 (2013)
47. Milisavljevic, D. et al, Multi-wavelength Observations of Supernova 2011ei: Time-dependent Classification of Type IIb and Ib Supernovae and Implications for Their Progenitors, *Astrophysical Journal* **767**, 71 (2013)
48. Zrake, J. & MacFadyen, A. I., Magnetic energy production by turbulence in binary neutron star mergers, *Astrophysical Journal Letters*, **769**, L29 (2013)
49. Duffell, P. C., & MacFadyen, A. I., Gap Opening by Extremely Low Mass Planets in a Viscous Disk, *Astrophysical Journal*, **769**, 41 (2013)
50. Gat, I., van Eerten, H. J., & MacFadyen, A. I., No flares from GRB afterglow blast waves encountering sudden circumburst density change, *Astrophysical Journal*, **771**, 1 (2013)
51. Andersson, N. et. al., The Transient Gravitational-Wave Sky, *Classical and Quantum Gravity*, **30**, 19 (2013)
52. Duffell, P. C., & MacFadyen, A. I., Rayleigh-Taylor Instability in a Relativistic Fireball on a Moving Computational Grid, *Astrophysical Journal*, **775**, 87 (2013)
53. Duffell, P. C., & MacFadyen, A. I., A “Boosted Fireball” Model for Structured Relativistic Jets, *Astrophysical Journal Letters*, **776**, L9 (2013)
54. Pfeiffer, H. & MacFadyen, A. I., Hyperbolicity of Force-Free Electrodynamics, under review, arxiv:1307.7782 (2013)
55. Perna, Rosalba; Duffell, Paul; Cantiello, Matteo; MacFadyen, Andrew I., The Fate of Fallback Matter around Newly Born Compact Objects, *Astrophysical Journal*, **781**, 119, (2014)
56. Farris, Brian D.; Duffell, Paul; MacFadyen, Andrew I.; Haiman, Zoltan, Binary Black Hole Accretion from a Circumbinary Disk: Gas Dynamics inside the Central Cavity, *Astrophysical Journal*, **783**, 134 (2014)

57. Duffell, P. C., & MacFadyen, A. I., Shock Corrugation by Rayleigh-Taylor Instability in GRB Afterglow Jets, *Astrophysical Journal Letters*, **791**, L1 (2014)
58. Mazzali, P., MacFadyen, A., Woosley, S., Pian, E., Tanaka, M., An upper limit to the energy of gamma-ray bursts indicates that GRB/SNe are powered by magnetars, *MNRAS*, **443**, 67 (2014)
59. Duffell, Paul C.; Haiman, Zoltan; MacFadyen, Andrew I.; D’Orazio, Daniel J.; Farris, Brian D., The Migration of Gap-opening Planets is Not Locked to Viscous Disk Evolution, *Astrophysical Journal Letters*, **792**, L10, (2014)
60. Chakraborti, S et. al., A Missing-Link in the Supernova-GRB Connection: The Case of SN 2012ap, *Astrophysical Journal*, **805**, 187 (2015)
61. Zhang, Bin-Bin; van Eerten, Hendrik; Burrows, David N.; Ryan, Geoffrey Scott; Racusin, Judith L.; Troja, Eleonora; MacFadyen, Andrew, A Comprehensive Analysis on Chandra Deep Follow-up GRBs: Implications for Off-Axis Jets, *Astrophysical Journal*, **806**, 15 (2015)
62. Ryan, G.; van Eerten, H.; MacFadyen, A.; Zhang, B., Gamma Ray Bursts Are Observed Off-Axis, *Astrophysical Journal*, **799**, 3 (2015)
63. Farris, Brian D.; Duffell, Paul; MacFadyen, Andrew I.; Haiman, Zoltan, Characteristic Signatures in the Thermal Emission from Accreting Binary Black Holes, *MNRAS Letters*, **446L**, 36 (2015)
64. Duffell, Paul C.; MacFadyen, Andrew I., From Engine to Afterglow: Collapsars Naturally Produce Top-Heavy Jets and Early-Time Plateaus in Gamma Ray Burst Afterglows, *Astrophysical Journal*, **806**, 205 (2015)
65. Bruno Giacomazzo, Jonathan Zrake, Paul Duffell, Andrew MacFadyen, and Rosalba Perna, Producing Magnetar Magnetic Fields in the Merger of Binary Neutron Stars, *Astrophysical Journal*, **809**, 39 (2015)
66. Duffell, Paul C.; MacFadyen, Andrew I., High-Frequency Voronoi Noise Reduced by Smoothed Mesh Motion, *MNRAS*, **449**, 2718, (2015)
67. Farris, Brian D.; Duffell, Paul; MacFadyen, Andrew I.; Haiman, Zoltan, Binary Black Hole Accretion During Inspiral and Merger, *MNRAS Letters*, **447**, L80 (2015)
68. D’Orazio, Daniel J.; Haiman, Zoltan; Duffell, Paul; Farris, Brian D.; MacFadyen, Andrew I., A reduced orbital period for the supermassive black hole binary candidate in the quasar PG 1302-102?, *MNRAS*, **452**, 2540D (2015)
69. Duffell, Paul C.; Quataert, Eliot; MacFadyen, Andrew I., A Narrow Short-Duration GRB Jet from a Wide Central Engine, *Astrophysical Journal*, **813**, 64 (2015)
70. D’Orazio, Daniel J.; Haiman, Zoltan; Duffell, Paul; MacFadyen, Andrew I.; Farris, Brian D., A transition in circumbinary accretion discs at a binary mass ratio of 1:25, *MNRAS*, **459**, 2379 (2016)
71. Ryan, Geoffrey & MacFadyen, Andrew, Minidisks in Binary Black Hole Accretion, *Astrophysical Journal*, **835**, 199 (2017)
72. Tang, Yike; MacFadyen, Andrew & Haiman, Zoltan, On the orbital evolution of supermassive black hole binaries with circumbinary accretion discs, *MNRAS*, **469**, 4258 (2017)