

**Jason Dexter**  
ASSISTANT PROFESSOR, CU BOULDER

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Astrophysical and Planetary Sciences & JILA    Phone: 303-492-7836  
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EDUCATION:    2011 - Ph.D., Physics, University of Washington, Seattle:  
                  "Radiative Models of Sgr A\* and M87 from Relativistic MHD Simulations"  
                  Research Advisor: Eric Agol  
                  2005 - B.A. Physics (Distinction), Occidental College, Los Angeles

RESEARCH INTERESTS: Black hole astrophysics, accretion disks, radiative transfer, MHD,  
active galactic nuclei, relativity, compact objects, transients, interferometry

EMPLOYMENT: Fall 2019 - Assistant professor and associate JILA fellow, CU Boulder  
Fall 2014 to Fall 2019 - Junior research group leader, MPE Garching  
Fall 2011 to Fall 2014 - Postdoctoral fellow, UC Berkeley  
Fall 2006 to Summer 2011 - Graduate research and teaching assistant, UW  
Fall 2005 to Summer 2006 - Research associate, Areté Associates

AWARDS:        2020 - Alfred P. Sloan Research Fellowship in Physics  
                  2020 - Event Horizon Telescope Early Career Award  
                  2020 - Breakthrough Prize in Fundamental Physics, shared by the  
                  Event Horizon Telescope collaboration  
                  2014 - Alexander von Humboldt Foundation Sofja Kovalevskaja Award  
                  2014 - Kavli Fellow  
                  2014 - Hubble Fellowship and Marie Curie Fellowship (declined)  
                  2011 - Theoretical Astrophysics Center Fellowship, UC Berkeley  
                  2008 - NASA Earth & Space Science Fellowship  
                  2008 - Kavli Institute for Theoretical Physics Graduate Fellowship, UCSB  
                  2005 - Phi Beta Kappa, Occidental College  
                  2002 - Margaret Bundy Scott Scholarship, Occidental College

GRANTS:        2021-2022 - NASA Fermi Cycle 14, "First-Principles Study of  $\gamma$ -ray  
                  Emission near the Event Horizon of M87," A. Chen Science PI, \$75k  
                  2020-2022 - Sloan Fellowship, \$75k  
                  2020-2023 - NSF MSIP, "The Event Horizon Telescope: Resolving Black  
                  Holes in Time and Space," V. Fish PI, \$335k to CU Boulder  
                  2020-2023 - NASA ATP, "Accretion Physics from Horizon Scale Black Hole  
                  Images and Movies," \$470k

2019-2022 - NSF AAG, “Spatially Resolving the AGN Broad Emission Line Region,” \$390k

2014-2019 - Sofja Kovalevskaja Award, “Exploring Strong Gravity in the Galactic Center,” 1.1 million Euro

#### PROFESSIONAL ACTIVITIES:

2017 to present - Event Horizon Telescope collaboration working group coordinator (model comparison and now theory), Science Council member, Diversity and Inclusion task force member, Ombudsperson

2022 - Summer workshop organizer, “Plasmas in strong gravity,” Aspen Center for Physics

2021 - SOC member, Princeton Center for Theoretical Sciences meeting about Event Horizon Telescope polarization results

2020 - Conference coordinator, “The Frontiers of Event Horizon Scale Accretion,” KITP

2018 - SOC member, Event Horizon Telescope collaboration meeting, Radboud University Nijmegen

2018 - SOC member, “The Central Arcsecond: Towards Testing General Relativity in the Galactic Center”, Ringberg Castle

Fall 2017 to 2019 - MPE representative to the ESO/MPA/MPE Joint Astronomy Colloquium committee

Fall 2015 to present - External reviewer for the ERC and grant and fellowship programs in the UK, Czech Republic, France, Poland, Switzerland, and South Africa

Fall 2012 to present - Peer review panel member and deputy chair, NASA Astrophysics Theory Program, NASA Earth & Space Sciences Fellowship, NSF Astronomy & Astrophysics, Chandra X-ray Observatory

Fall 2011 to 2013 - Theoretical Astrophysics Center seminar co-organizer

Fall 2011 to 2013 - Berkeley Compass Project staff member

Summer 2010 to 2011 - Pre-Major in Astronomy Program staff member

Referee - ApJ, MNRAS, A&A, PRL, PRD, Nature, Nature Astronomy, CQG, New Astronomy, EJP, GW Notes, RAA

#### SUPERVISION OF STUDENTS AND POSTDOCTORAL FELLOWS:

2021 to present - Eleanor Gentry, undergraduate student, CU Boulder

2021 to present - Alex Fix, undergraduate student, CU Boulder

2020 to present - Alexander Chen, postdoctoral fellow, JILA/CU Boulder

2020 to present - Michelle Athay, graduate student, CU Boulder

2020 to 2021 - Zhiyu (Philippe) Yao, undergraduate student, CU Boulder

2020 - Tatsuya Akiba, graduate student, CU Boulder

2019 to present - Nicolas Scepi, postdoctoral fellow, JILA/CU Boulder  
 2019 to present - Girish Duvirii, Daniel David Sega, Jennie Paine,  
 Heather Wernke, Alexander Zderic, John Mehlhaff, Kai Wong,  
 Tatsuya Akiba, Hannalore Gerling-Dunsmore,  
 CU Boulder comps or thesis committee  
 2019 to 2020 - Kristin Eickelbeck, Byram Hills High School, NY  
 2018 to 2019 - Jinyi Shangguan, postdoctoral fellow, MPE Garching  
 2018 to 2019 - Shuo Xin, BSc student, Tongji University, China  
 2017 to 2018 - M. Raphael Stock, MSc student, MPE Garching  
 2016 to 2019 - Michael Bauböck, postdoctoral fellow, MPE Garching  
 2016 to 2020 - Alejandra Jiménez-Rosales, PhD student, MPE Garching  
 2016 to 2019 - Linda Baronchelli and Sebastiano von Fellenberg,  
 PhD thesis committee, MPE Garching  
 2015 to 2019 - Idel Waisberg, PhD student, MPE Garching  
 2015 to 2016 - Egid Sicheneder, MSc, MPE Garching  
 2015 to 2018 - Philipp Plewa, PhD student, MPE Garching  
 (MPE GC group)  
 2014 to 2015 - S. Alwin Mao, BSc, UC Berkeley (PhD 2020, Princeton)  
 2013 - John Ruan, PhD, Univ. Washington (advisor Prof. Scott Anderson)  
 2012 to 2014 - Angelo Ricarte, BSc, UC Berkeley (PhD 2019, Yale)  
 2012 to 2013 - Ayman Bin Kamruddin, BSc, UC Berkeley  
 (now MSc, UCL)  
 2011 to 2013 - Salome Dibi, PhD, Amsterdam (advisor Prof. Sera Markoff)  
 2011 to 2013 - Samia Drappeau, PhD, Amsterdam  
 (advisor Prof. Sera Markoff)

Students under my direct supervision have published 12 first  
 author articles in peer-reviewed Astrophysics journals.

#### TEACHING EXPERIENCE AND TRAINING:

CU Boulder  
 Spring 2022 – ASTR 3400, Research Methods in Astronomy,  
 undergraduate elective  
 Spring 2021 – ASTR 5710, High Energy Astrophysics, graduate elective  
 Fall 2020, 2021 – ASTR 3730, Astrophysics I, upper level majors course  
 Fall 2019 – ASTR 2030, Black Holes, an introduction for nonscience majors  
 2013 – Center for Astronomy Education Tier I Workshop  
 2010 – Instructor, Astro 192, Pre-MAP seminar, UW  
 Organized and led the Pre-Major in Astronomy Program seminar,  
 designed to get first year students involved in research in Astronomy.  
 Taught introductory programming and science communication skills to  
 10 first year college students. The seminar is part of a larger program  
 aiming to increase diversity in STEM majors at UW.  
 2008 – Teaching Assistant, Physics 323, Electromagnetism III, UW

Prepared and taught two discussion sections for a total of 25 upper level physics majors. Gave a substitute lecture.

2006 to 2007 – Teaching Assistant, Physics 121-123 tutorials, UW  
Led 6 tutorial sections for 121 total students. Asked students questions designed to lead them to a deeper conceptual understanding of introductory physics.

2006 to 2007 – Teaching Assistant, Physics 117-123 labs, UW  
Lab instructor for 92 total students (7 sections).

#### INFORMAL TEACHING:

Invited Guest Lecturer

2020-2021 – ASTR 2030, 1h introduction to black hole images

2019 – PhD level, 3 hr tutorials on GRMHD and ray tracing,

Advancing Theoretical Astrophysics summer school, Amsterdam

2018 – PhD level, 15 hr on accretion physics and strong gravity,  
University of Heidelberg physics graduate days

2017 – PhD level, 5 hr on the Galactic center, University of Bologna

2016 – PhD level, 6 hr on the Galactic center, Selected Chapters on  
Astrophysics, Charles University Astronomical Institute, Prague

2011 – PhD level, 1 hr on turbulence and convection, Astrophysical Fluids,  
UC Berkeley

2016 – Supervised MSc level seminar on intermediate black holes, LMU

2011 – Final Project PI, Physics 98, UC Berkeley

Supervised final research projects on black holes and astrophysics for three  
first year undergraduate students.

2013 to 2015 – Published three “Ask Astro” columns in Astronomy  
magazine and one response in La Recherche answering reader questions  
about black holes.

Public Lectures

2017 Humboldt Club, Munich Chapter

2012 Chabot Space & Science Center

2012 UC Berkeley Science@Cal

2011 East Bay Astronomical Society

2004 to 2005 – Workshop Facilitator, AMP, Occidental College

Led challenging two hour physics workshops for 25 highly motivated  
students interested in excelling in the sciences. Independently developed  
weekly workshop materials for two semesters.

2003 to 2005 – Peer Advisor, CAE, Occidental College

Held drop-in hours for students with questions about concepts or  
assignments in a wide range of physics and math courses.

#### PRESS COVERAGE:

“Scientists dig deeper into M87, subject of first-ever image of a black hole,”  
CU Boulder Today, 3/2021

“Astronomers Image Magnetic Fields at the Edge of M87’s Black Hole,”  
ESO press release for the Event Horizon Telescope polarized image of M87,  
3/2021

“3 up-and-coming researchers win prestigious early-career award,”  
CU Boulder Today, 2/2020

“Jason Dexter, JILA’s newest fellow, wins Breakthrough Prize,”  
JILA press release. My involvement was also featured by the University of  
Washington and the Max Planck Institute for Radio Astronomy. 9/2019.

“Astronomers Capture First Image of a Black Hole,” EHT press release,  
featured on front pages of newspapers worldwide. I was interviewed by  
news outlets in the UK, Germany, and the USA including the BBC World  
Service and the Denver NBC affiliate 9news. 4/2019.

“Einstein’s theory was put to the test. Guess what happened,”  
D. Lincoln, CNN, 4/2019

“Super-Keplerian equatorial outflows in SS433. Centrifugal ejection of the  
circumbinary disk,” A&A Highlight, 3/2019.

“Giant Stars in Our Black Hole’s Neighborhood,” K. Hensley, AAS Nova,  
3/2019.

“Top 10 space stories of 2018,” featuring the detection of the gravitational  
redshift around Sgr A\*, L. Kruesi, Astronomy Magazine, 1/2019.

“Lifting the veil on the black hole at the heart of our Galaxy,”  
CfA/Nijmegen/MPIfR press release, 1/2019.

“Rotating Gas in a Quasar’s Heart,” C. M. Carlisle, Sky & Telescope,  
1/2019.

“A glimpse into the heart of a quasar,” E. Kara, Nature News & Views,  
11/2018.

“A close-up look at the whirlpool around a gigantic black hole,”  
MPE and MPG press release (picked up by many outlets), 11/2018.

“Black holes, shark skin and cockatoo tools – November’s best  
science images,” Nature article featuring our GRAVITY flare simulations,  
11/2018

“The Milky Way’s Monster, Unveiled,” L. Billings, Scientific American,  
10/2018.

“Trolling the Monster in the Heart of the Milky Way,” D. Overbye,  
The New York Times, 10/2018.

“Most Detailed Observations of Material Orbiting Close to a Black Hole,”  
ESO press release (picked up by many outlets), 10/2018.

“First Confirmation of Einstein’s General Relativity Near Supermassive Black Hole,” ESO press release (picked up by many outlets), 7/2018.

“Imaging and imagining black holes,” Nature, 3/2017.

“A black hole changes its feeding habits,” S. LaMassa, Nature News & Views, 11/2016.

“Gravitationswellen - das neue Bild des Universums,” WDR TV program, 9/2016.

“Starving Black Hole Returns Brilliant Galaxy to the Shadows,” ESO press release, 9/2016.

“Successful First Observations of Galactic Centre with GRAVITY,” ESO press release, 6/2016.

“A method to image black holes,” MIT News (and Time, CNN, The Washington Post, Popular Science, and The Boston Globe), 6/2016.

“Trous Noirs: Les Voir Enfin?” Science et Vie, 2/2016.

Interviewed about my work and life as a foreign scientist in Germany for the Deutsche Welle program Tomorrow Today, 2/2016.

“First Light for Future Black Hole Probe,” ESO press release, 1/2016.

“Event Horizon Telescope Reveals Magnetic Fields at Milky Way’s Central Black Hole,” Harvard/CfA press release, 12/2015.

“Sagittarius A\*: NASA’s *Chandra* Catches Our Galaxy’s Giant Black Hole Rejecting Food,” Chandra X-ray Observatory press release (and Nature World News, Astronomy Magazine, Huffington Post, and others), 8/2013.

“Incredible Technology: How to See a Black Hole,” Clara Moskowitz, Space.com (and Discovery, Huffington Post UK, and others), 7/2013.

“What Will First Photos of Black Holes Look Like?” Clara Moskowitz, Space.com (and Yahoo!, Discovery, Huffington Post, and others), 1/2013.

“A-List black hole gets a face,” David Shiga, New Scientist, 2/2012.

INVITED COLLOQUIA AND SEMINARS: Amsterdam, Arizona, Bath, Bologna, Caltech, Charleston, Colorado (2), Columbia, U. Concepcion, Dartmouth, ESO/MPA/MPE(3), Grenoble, Harvard/CfA/BHI (6), IAS, Illinois, Maryland, MIT, MPIfR (4), Nijmegen (2), Northwestern (2), Oklahoma, Paris, Prague (2), PUC Chile, Southampton, Stanford (3), Vanderbilt, Virginia/NRAO, UC Berkeley/LBNL (4), UC Los Angeles, UC Santa Barbara, UC Santa Cruz, Utah, Washington (2)

INVITED CONFERENCE PRESENTATIONS:

(37 conference presentations, 27 as an invited speaker)

- Jun 16, 2021 - “Horizon scale magnetic fields from polarized black hole images” (remote), Extragalactic jets on all scales, Heidelberg, Germany

- Jul 15, 2020 - “Supermassive black hole imaging” (remote review talk), Compact Objects and Energetic Phenomena in the Multi-Messenger Era
- May 21, 2020 - “Simulating black hole images: high-performance computing in the Event Horizon Telescope project” (remote keynote), RMACC symposium, Boulder, CO
- Nov 11, 2019 - “Imaging black holes: beyond the shadow,” The New Faces of Black Holes, Annapolis, MD
- Jun 25, 2019 - “The first black hole image,” Discoveries and Open Puzzles in Particle Physics and Gravitation, Kitzbühel, Austria
- Dec 10, 2018 - “The resolved size and structure of hot dust in AGN,” TORUS 2018, Puerto Varas, Chile
- Nov 5, 2018 - “Event Horizon Scale Images of M87” (plenary), Event Horizon Telescope collaboration meeting 2018, Nijmegen, Netherlands
- Nov 1, 2018 - “Radiation and accretion physics around Sgr A\*” (review), The Central Arcsecond, Ringberg Castle, Germany
- July 15, 2018 - “Radiation and accretion physics around Sgr A\*,” COSPAR 2018, Pasadena, CA
- Oct 15, 2017 - “HII regions as the physical origin of intense interstellar scattering,” Pulsar Scintillometry, Toronto, Canada
- Sep 15, 2017 - “Imaging a supermassive black hole,” Observing black holes: from the universe to the lab, Institute of Physics Gravitational Physics Group annual meeting, London, UK
- Jul 11, 2017 - “Variable and changing look AGN as probes of accretion physics,” Unveiling the Physics Behind Extreme AGN Variability, St. Thomas, US Virgin Islands
- Jun 28, 2017 - “Sgr A\*: extreme gravity, ordinary accretion” (solicited), Accreting black holes at their extremes, EWASS 2017, Prague, Czech Republic
- Feb 10, 2017 - “Testing MHD Accretion Theory with Event Horizon Scale Observations of Low-luminosity AGN,” Disks, Dynamos, and Data: Confronting MHD Accretion Theory with Observations, KITP, Santa Barbara, CA
- Oct 6, 2016 - “GRMHD simulations of the black hole shadow in Sgr A\* and M87,” Black Holes and Black Hole Alternatives, Oldenburg, Germany
- Jul 13, 2016 - “Event Horizon Scale Emission Models of Sgr A\* and M87,” Simulations and Modelling of Relativistic MHD Accretion Discs, Oxford University, Oxford, UK
- Nov 4, 2015 - “Visualizing and observing black hole event horizons,” Interdisciplinary Cluster Workshop on Visualization, Garching, Germany

- Sep 16, 2015 - “Exploring Strong Gravity in the Galactic Center” (plenary), Fall Meeting of the Astronomische Gesellschaft, Kiel, Germany
- Jul 13, 2015 - “Strong Gravity from Interferometric Observations of Sgr A\*,” 14th Marcel Grossmann Meeting, Rome, Italy
- Nov 17, 2014 - “Imaging a Black Hole,” Kavli Frontiers of Science, Irvine, CA
- Nov 14, 2014 - “Crescent Black Hole Images,” EHT 2014, Perimeter Institute, Waterloo, Ontario
- May 1, 2013 - “General Relativistic Emission Models of Sgr A\* and M87,” Revealing Radiative Processes near Black Holes, Princeton Center for Theoretical Sciences, Princeton, NJ
- November 29, 2012 - “The Size of the Jet Launching Region in M87,” Binary Black Holes & Dual AGN: A Workshop in Memory of David S. De Young, Tucson, AZ
- June 25, 2012 - “Inhomogeneous Accretion Disk Models of Luminous Black Holes,” Black Holes by the Black Sea, Istanbul, Turkey
- June 18, 2012 - “Extremely Faint and Incredibly Close: the Physics of Accretion onto Sagittarius A\*” (review talk), Black Hole Universe, Bamberg, Germany
- January 18, 2012 - “Event Horizon Scale Emission in Sgr A\* and M87 from GRMHD Simulations,” Bringing Black Holes into Focus: The Event Horizon Telescope, Tucson, AZ
- September 2, 2011 - “Theory, Simulation, and Observation: Piecing Together Black Hole Accretion,” The Future of Astronomy, Evanston, IL

#### CONTRIBUTED CONFERENCE PRESENTATIONS:

- Dec 1, 2016 - “Event horizon scale polarization around Sgr A\* and M87” (plenary), Event Horizon Telescope 2016 consortium meeting, Cambridge, MA
- Mar 24, 2014 - “Spectral signatures of super-luminous supernovae powered by magnetars and black holes,” The Structure and Signals of Neutron Stars: from Birth to Death, Florence, Italy
- Nov 5, 2013 - “A Model of the Spectra and High-Frequency QPOs in Black Hole X-ray Binaries,” Putting Accretion Theory to the Test, Annapolis, MD
- October 3, 2013 - “Event Horizon Scale Emission Models for Sgr A\*,” The Galactic Center: Feeding and Feedback in a Normal Galactic Nucleus, IAU Symposium 303, Santa Fe, NM
- September 2, 2013 - “A Model of the Steep Power Law Spectra and High-Frequency Quasi-Periodic Oscillations in Luminous Black Hole X-ray Binaries,” Black Hole (g)Astronomy, Brindisi, Italy



- January 6, 2013 - “Tilted Black Hole Accretion Disk Models of Sgr A\* Flares,” AAS 221, Long Beach, CA
- January 23, 2012 - “Alternative Supernova Energy Sources,” The Physics of Astronomical Transients, Aspen, CO
- August 30, 2011 - “Time-dependent Radiative Models of Sgr A\* and M87 from Relativistic MHD Simulations,” The Central Kiloparsec in Galactic Nuclei, Bad Honnef, Germany
- January 12, 2011 - “General Relativistic MHD Models of Sgr A\* and M87” (dissertation talk), AAS 217, Seattle, WA
- February 14, 2010 - “Constraining Sgr A\* Using General Relativistic MHD Simulations,” Probing Strong Gravity, Prague, Czech Republic

PEER-REVIEWED PUBLICATIONS:

(23 first and 21 second or corresponding (marked \*) author, 8900+ citations, h-index 49, student authors underlined, ADS link here)

124. “Magnetized funnel properties and prospects for gap acceleration in radiation GRMHD simulations of M87,” Yao, P. Z., **Dexter, J.**, Chen, A. Y., et al., 2021, MNRAS, 507, 4864
123. “Radiation GRMHD Simulations of the Black Hole X-ray Binary Hard state and the Collapse of a Hot Accretion Flow,” **Dexter, J.**, Scepi, N., Begelman, M. C., 2021, ApJL, 919, L20
122. “Sgr A\* X-ray flares from non-thermal particle acceleration in a magnetically arrested disc,” Scepi, N., **Dexter, J.**, Begelman, M. C., 2021, submitted to MNRAS 7/2021
121. “The mass of  $\beta$  Pictoris c from  $\beta$  Pictoris b orbital motion,” Lacour, S., et al. including **Dexter, J.**, 2021, A&A Letters, 654, 2
120. “A geometric distance to NGC 3783,” GRAVITY Collaboration including **Dexter, J.**, 2021, A&A, 654, 85
119. “Constraining particle acceleration in Sgr A\* with simultaneous GRAVITY, Spitzer, NuSTAR and Chandra observations,” GRAVITY Collaboration including **Dexter, J.**, 2021, A&A, 654, 22
118. “GRAVITY K-band spectroscopy of HD 206893 B: Brown dwarf or exoplanet?” Kammerer, J., et al., including **Dexter, J.**, 2021, A&A, 652, 57
117. “MOLsphere and pulsations of the Galactic Center’s red supergiant GCIRS 7 from VLTI/GRAVITY”, GRAVITY Collaboration: Rodriguez-Coira et al. including **Dexter, J.**, 2021, A&A, 651, 37
116. “Broadband Multi-wavelength Properties of M87 during the 2017 Event Horizon Telescope Campaign,” EHT MWL Science Working Group including **Dexter, J.**, 2021, ApJL, 911, 11
115. “The Polarized Image of a Synchrotron Emitting Ring of Gas Orbiting a Black Hole,” Narayan, R. et al., including **Dexter, J.**, 2021, ApJ, 912, 35
114. “The central parsec of NGC 3783: a rotating broad emission line region, asymmetric hot dust structure, and compact coronal line region” GRAVITY collaboration including **Dexter, J.**, 2021, A&A, 648, 117
113. “Relative depolarization of the black hole photon ring in GRMHD models of Sgr A\* and M87,” Jimenez-Rosales, A., **Dexter, J.**, Ressler, S. M., Tchekhovskoy, A., et al., 2021, MNRAS, 503, 4563

112. (\*) “First M87 Event Horizon Telescope Results VIII: Magnetic Field Structure Near The Event Horizon,” The Event Horizon Telescope collaboration including **Dexter, J.**, 2021, ApJL, 910, L13
111. “First M87 Event Horizon Telescope Results VII: Polarization of the Ring,” The Event Horizon Telescope collaboration including **Dexter, J.**, 2021, ApJL, 910, L12
110. “Polarimetric Properties of Event Horizon Telescope Targets from ALMA,” Goddi, C. et al. including **Dexter, J.**, 2021, ApJL, 910, L14
109. “Improved GRAVITY astrometric accuracy from modeling of optical aberrations,” GRAVITY Collaboration including **Dexter, J.**, 2021, A&A, 647, 59
108. “Magnetic flux inversion in a peculiar changing look AGN,” Scepi, N., Begelman, M. C., **Dexter, J.**, 2021, MNRAS Letters, 502, 50
107. “QPOs in compact binaries from small scale eruptions in an inner magnetized disk,” Scepi, N., Begelman, M. C., **Dexter, J.**, 2021, MNRAS, 500, 1547
106. “Detection of faint stars near Sgr A\* with GRAVITY,” GRAVITY Collaboration, including **Dexter, J.**, 2021, A&A, 645, 127
105. “Determining Subparsec Supermassive Black Hole Binary Orbits with Infrared Interferometry,” **Dexter, J.** et al., 2020, ApJ, 905, 33
104. “Dynamically important magnetic fields near the event horizon of Sgr A\*,” GRAVITY collaboration: Jiménez-Rosales, A., **Dexter, J.**, Widmann, F., Bauböck, M., et al., 2020, A&A, 643, 56
103. “The spatially resolved broad line region of IRAS 09149-6206,” GRAVITY collaboration, including **Dexter, J.**, 2020, A&A, 643, 154
102. “Gravitational Test beyond the First Post-Newtonian Order with the Shadow of the M87 Black Hole,” Psaltis, D., et al. including **Dexter, J.**, 2020, PRL, 125, 141104
101. “Direct confirmation of the radial-velocity planet  $\beta$  Pic c,” M. Nowak, et al., including **Dexter, J.**, A&A Letters, 2020, 642, 2
100. “Monitoring the Morphology of M87\* in 2009-2017 with the Event Horizon Telescope,” Wielgus, M., et al. including **Dexter, J.**, 2020, ApJ, 901, 67
99. “Sgr A\* near-infrared flares from reconnection events in a magnetically arrested disc,” **Dexter, J.**, Tchekhovskoy, A., Jiménez-Rosales, A., Ressler, S. M., et al., 2020, MNRAS, 497, 4999
98. “Event Horizon Telescope imaging of the archetypal blazar 3C 279 at an extreme 20 microarcsecond resolution,” Kim, J.-Y. et al., including **Dexter, J.**, 2020, A&A, 640, 69

97. “Verification of Radiative Transfer Schemes for the EHT,” Gold, R., et al., including **Dexter, J.**, 2020, ApJ, 897, 148
96. “The flux distribution of Sgr A\*,” GRAVITY collaboration including **Dexter, J.**, 2020, A&A, 638, 2
95. “The Effects of Tilt on the Images of Black Hole Accretion Flows,” White, C. J., **Dexter, J.**, Blaes, O., Quataert, E., 2020, ApJ, 894, 1
94. “Infrared interferometry to spatially and spectrally resolve jets in X-ray binaries,” Markoff, S., Russell, D. M., **Dexter, J.**, Pfuhl, O., Eisenhauer, F., Abuter, R., Miller-Jones, J. C. A., Russell, T. D., 2020, MNRAS, 495, 525
93. “A parameter survey of Sgr A\* radiative models from GRMHD simulations with self-consistent electron heating,” **Dexter, J.**, Jiménez-Rosales, A., Ressler, S. M., Tchekhovskoy, A., et al., 2020, MNRAS, 494, 4168
92. “Detection of the Schwarzschild Precession in the Orbit of the Star S2 near the Galactic Centre Massive Black Hole,” GRAVITY collaboration including **Dexter, J.**, 2020, A&A Letters, 636, L5
91. “SYMBA: An end-to-end VLBI synthetic data generation pipeline,” Roelofs, F., Janssen, M., et al. including **Dexter, J.**, 2020, A&A, 636, A5
90. “Modeling the orbital motion of Sgr A\*’s near-infrared flares,” GRAVITY collaboration: Bauböck, M., **Dexter, J.**, et al., 2020, A&A, 635, A143
89. “The resolved size and structure of hot dust in the immediate vicinity of AGN,” GRAVITY collaboration: **Dexter, J.**, et al., 2020, A&A, 635, A92
88. “An image of the dust sublimation region in the nucleus of NGC 1068,” GRAVITY collaboration: Pfuhl, O., Davies, R., **Dexter, J.**, et al., 2020, A&A Letters, 634, L1
87. “Peering into the formation history of beta Pictoris b with VLTI/GRAVITY long-baseline interferometry,” GRAVITY collaboration: Nowak, M., et al., including **Dexter, J.**, 2020, A&A, 633, A110
86. “*Chandra* Spectral and Timing Analysis of Sgr A\*’s Brightest X-ray Flares,” Haggard, D., et al., including **Dexter, J.**, 2019, ApJ, 886, 96
85. “The GRAVITY Young Stellar Object survey: I. Probing the disks of Herbig Ae/Be stars at terrestrial orbits,” GRAVITY collaboration: Perraut, K., et al., including **Dexter, J.**, 2019, A&A, 632, 53
84. “The Sloan Digital Sky Survey Reverberation Mapping Project: Accretion and Broad Emission Line Physics from a Hypervariable Quasar,” **Dexter, J.**, Shuo, X., Shen, Y., Grier, C. J., et al., 2019, ApJ, 885, 44
83. “Scalar field effects on the orbit of the star S2,” Ferreira, M., et al., including **Dexter, J.**, 2019, MNRAS, 489, 4606

82. "ALMA observations of the Terahertz spectrum of Sagittarius A\*," Bower, G. C., **Dexter, J.** et al., 2019, ApJL, 881, L1
81. "A geometric distance measurement to the Galactic center black hole with 0.3% uncertainty," GRAVITY collaboration including **Dexter, J.**, 2019, A&A Letters, 625, L10
80. "The Collimated Radiation in SS 433: Constraints from Spatially Resolved Optical Jets and Cloudy Modeling of the Optical Bullets," Waisberg, I., **Dexter, J.**, Petrucci, P. O., Dubus, G., Perraut, K., 2019, A&A, 624, 127
79. "First M87 Event Horizon Telescope Results I: The Shadow of the Supermassive Black Hole," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L1
78. "First M87 Event Horizon Telescope Results II: Array and Instrumentation," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L2
77. "First M87 Event Horizon Telescope Results III: Data Processing and Calibration," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L3
76. "First M87 Event Horizon Telescope Results IV: Imaging of the Central Black Hole," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L4
75. "First M87 Event Horizon Telescope Results V: Physical Origin of the Asymmetric Ring," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L5
74. (\*) "First M87 Event Horizon Telescope Results VI: The Shadow and Mass of the Central Black Hole," The Event Horizon Telescope collaboration including **Dexter, J.**, 2019, ApJL, 875, L6
73. "Test of the Einstein Equivalence Principle near the Galactic Center Massive Black Hole," GRAVITY collaboration, including **Dexter, J.**, 2019, PRL, 122, 101102
72. "First direct detection of an exoplanet by optical interferometry: Astrometry and K band spectroscopy of HR8799e," GRAVITY collaboration: Lacour, S., et al. including **Dexter, J.**, 2019, A&A Letters, 623, 11
71. "Super-Keplerian Equatorial Outflows in SS 433: Centrifugal Ejection of the Circumbinary Disk," Waisberg, I., **Dexter, J.**, Petrucci, P. O., Dubus, G., Perraut, K., 2019, A&A, 623, 47
70. "Detection of a Flat Cusp of Late-type Stars around the Galactic Center Black Hole," Habibi, M., and 12 co-authors including **Dexter, J.**, 2019, ApJL, 872, L15
69. "Extreme AGN variability: evidence of magnetically elevated accretion?" **Dexter, J.** & Begelman, M. C., 2019, MNRAS Letters, 483, 17

68. “Detection of a drag force in G2’s orbit: Measuring the density of the accretion flow onto Sgr A\* at 1000 Schwarzschild radii,” Gillessen, S., et al, including **Dexter, J.**, 2019, ApJ, 871, 126
67. “The Size, Shape, and Scattering of Sagittarius A\* at 86 GHz: First VLBI with ALMA,” Issaoun, S., et al., including **Dexter, J.**, 2019, ApJ, 871, 30
66. “ALMA Polarimetry of Sgr A\*: Probing the Accretion Flow from the Event Horizon to the Bondi Radius,” Bower, G. C., Broderick, A., **Dexter, J.**, and 10 additional co-authors, 2018, ApJ, 868, 101
65. “Multiple Star Systems in the Orion Nebula,” GRAVITY collaboration, Karl, M., et al., including **Dexter, J.**, 2018, A&A, 620, 116
64. (\*) “Spatially resolved rotation of the broad-line region of a quasar at sub-parsec scale,” GRAVITY collaboration: Sturm, E., **Dexter, J.**, Pfuhl, O., Stock, M. R., et al., 2018, Nature, 563, 657
63. “The Scattering and Intrinsic Structure of Sagittarius A\* at Radio Wavelengths,” Johnson, M. D., et al., including **Dexter, J.**, 2018, ApJ, 865, 104
62. (\*) “Detection of orbital motions near the last stable circular orbit of the massive black hole Sgr A\*,” GRAVITY collaboration, et al., including **Dexter, J.**, 2018, A&A Letters, 618, L10
61. “GRAVITY chromatic imaging of  $\eta$  Car’s core: Multi-epoch milliarcsecond resolution imaging of the wind-wind collision zone,” GRAVITY collaboration, et al., including **Dexter, J.**, 2018, A&A, 618, 125
60. “The impact of Faraday effects on polarized black hole images of Sagittarius A\*,” Jimenez-Rosales, A. & **Dexter, J.**, 2018, MNRAS, 478, 1875
59. “A Detection of Sgr A\* in the Far Infrared,” von Fellenberg, S. D., Gillessen, S., Garcia-Carpio, J., Fritz, T., **Dexter, J.**, et al., 2018, ApJ, 862, 129
58. “Detection of the Gravitational Redshift in the Orbit of the Star S2 near the Galactic Centre Massive Black Hole,” GRAVITY collaboration, et al., including **Dexter, J.**, 2018, A&A Letters, 615, 15
57. “What stellar orbit is needed to measure the spin of the Galactic center black hole from astrometric data?” Waisberg, I., **Dexter, J.**, Gillessen, S., Pfuhl, O., Eisenhauer, F., Plewa, P. M., Bauböck, M., Jimenez-Rosales, A., et al., 2018, MNRAS, 476, 3600
56. “Detection of Intrinsic Source Structure at  $\sim 3$  Schwarzschild Radii with Millimeter-VLBI Observations of Sagittarius A\*,” Lu, R., et al., including **Dexter, J.**, 2018, ApJ, 859, 60
55. “Probing the gas density in our Galactic center: moving mesh simulations of G2,” Steinberg, E., Sari, R., Gnat, O., and 12 additional co-authors including **Dexter, J.**, 2018, MNRAS, 473, 1841

54. “The wind and the magnetospheric accretion onto the T Tauri star S CrA N traced at sub-au resolution,” GRAVITY Collaboration, Garcia Lopez, R. et al., including **Dexter, J.**, 2017, A&A, 608, 78
53. “The Close AGN Reference Survey (CARS): Mrk 1018 halts dimming and experiences strong short-term variability,” Krumpe, M., Husemann, B., Urrutia, T., Tremblay, G. R., Powell, M., Davis, T. A., Scharwächter, J., **Dexter, J.**, et. al., 2017, A&A Letters, 607, L9
52. “Locating the intense interstellar scattering towards the inner Galaxy,” **Dexter, J.**, Deller, A., Bower, G. C., Demorest, P., Kramer, M., Stappers, B., Lyne, A. G., Kerr, M., Spitler, L., Psaltis, D., Johnson, M., Narayan, R., 2017, MNRAS, 471, 3563
51. “Twelve Years of Spectroscopic Monitoring in the Galactic Center: the Closest Look at S-stars near the Black Hole,” Habibi, M., Gillessen, S., Martins, F., and 11 additional co-authors including **Dexter, J.**, 2017, ApJ, 847, 120
50. “Simultaneous Monitoring of X-ray and Radio Variability in Sagittarius A\*,” Capellupo, D. M., Haggard, D., Choux, N., and 14 additional co-authors including **Dexter, J.**, 2017, ApJ, 845, 35
49. “Submilliarcsecond Optical Interferometry of the High-mass X-ray Binary BP Cru with VLTI/GRAVITY,” GRAVITY collaboration, Waisberg, I., **Dexter, J.**, Pfuhl, O., et al., 2017, ApJ, 844, 72
48. “Sagittarius A\* High Energy X-ray Flare Properties During *NuSTAR* Monitoring of the Galactic Center from 2012 to 2015,” Zhang, S., Baganoff, F. K., Ponti, G., Neilsen, J., Tomsick, J., **Dexter, J.**, and 14 additional co-authors, 2017, ApJ, 843, 96
47. “What is the Hidden Depolarization Mechanism in Low Luminosity AGN?” Bower, G. C., **Dexter, J.**, Markoff, S., Rao, R., Plambeck, R. L., 2017, ApJL, 843, L31
46. “Accretion-ejection morphology of the microquasar SS433 resolved at sub-au scale,” GRAVITY collaboration, Petrucci, P.O., Waisberg, I., Le Bouquin, J.-B., **Dexter, J.**, Dubus, G., Perraut, K., Eisenhauer, F., et al., 2017, A&A Letters, 602, 11
45. “First light for GRAVITY: Phase referencing optical interferometry for the Very Large Telescope Interferometer,” GRAVITY collaboration, including **Dexter, J.**, 2017, A&A, 602, 94
44. “The Post-pericenter Evolution of the Galactic Center Source G2,” Plewa, P. M., Gillessen, S., Pfuhl, O., Eisenhauer, F., Genzel, R., **Dexter, J.**, George, E., Habibi, M., Ott, T., Waisberg, I., 2017, ApJ, 840, 50
43. “A powerful flare from Sgr A\* confirms the synchrotron nature of the X-ray emission,” Ponti, G., George, E., Scaringi, S., Zhang, S., Jin, C., **Dexter, J.**, and 19 additional co-authors, 2017, MNRAS, 468, 2447

42. “Faraday rotation in GRMHD simulations of the jet launching zone of M87,” Móscibrodzka, M., **Dexter, J.**, Davelaar, J., Falcke, H., 2017, MNRAS, 468, 2214
41. “A transient, flat spectrum radio pulsar near the Galactic centre,” **Dexter, J.**, Degeenaar, N., Kerr, M., Deller, A., Deneva, J., Lazarus, P., Kramer, M., Champion, D., Karuppusamy, R., 2017, MNRAS, 468, 1486
40. “A single HII region model of the strong interstellar scattering towards the Galactic center,” Sicheneder, E. & **Dexter, J.**, 2017, MNRAS, 467, 3642
39. “The impact of non-thermal electrons on event horizon scale images and spectra of Sgr A\*,” Mao, S. A., **Dexter, J.**, & Quataert, E., 2017, MNRAS, 466, 4307
38. “Imaging the Schwarzschild-radii-scale Structure of M87 with the Event Horizon Telescope Using Bi-Spectrum Sparse Modeling,” Akiyama, K., Kuramochi, K., Ikeda, S., Tazaki, F., Honma, M., Fish, V. L., Doeleman, S. S., Broderick, A., **Dexter, J.**, Móscibrodzka, M., Zaizen, M., 2017, ApJ, 838, 1
37. “Super-resolution Full Polarimetric Imaging for Radio Interferometry with Sparse Imaging,” Akiyama, K., Ikeda, S., Pleau, M., Fish, V. L., Tazaki, F., Kuramochi, K., Broderick, A., **Dexter, J.**, Móscibrodzka, M., Gowanlock, M., Honma, M., Doeleman, S. S., 2017, AJ, 153, 159
36. “An Update On Monitoring Stellar Orbits In The Galactic Center” Gillessen, S., Plewa, P., Eisenhauer, F., Waisberg, I., Habibi, M., Pfuhl, O., George, E., **Dexter, J.**, von Fellenberg, S., Ott, T., Genzel, R., 2017, ApJ, 837, 30
35. “The Close AGN Reference Survey (CARS): what is causing Mrk 1018’s return to the shadows after 30 years?” Husemann, B., Urrutia, T., Tremblay, G. R., Krumpke, M., **Dexter, J.**, and 9 additional co-authors, 2016, A&A Letters, 593, L9
34. “A public code for general relativistic, polarised radiative transfer around spinning black holes,” **Dexter, J.**, 2016, MNRAS, 462, 115
33. “Young and Millisecond Pulsar GeV Gamma-ray Fluxes from the Galactic Center and Beyond,” O’Leary, R. M., Kistler, M. D., Kerr, M., & **Dexter, J.**, 2016, arXiv:1601.05797
32. “Persistent Asymmetric Structure of Sagittarius A\* on Event Horizon Scales,” Fish, V. L., and 68 co-authors including **Dexter, J.**, 2016, ApJ, 820, 90
31. “X-Ray Polarimetry with the Polarization Spectroscopic Telescope Array (PolSTAR),” Krawczynski, H. S., and 51 co-authors including **Dexter, J.**, 2016, Astroparticle Physics, 75, 8
30. “Resolved Magnetic Field Structure and Variability Near the Event Horizon of Sagittarius A\*,” Johnson, M., and 48 co-authors including **Dexter, J.**, 2015, Science, 350, 1242



29. “Pinpointing the near-infrared location of Sgr A\* by correcting optical distortion in the NACO imager,” Plewa, P. M., Gillessen, S., Eisenhauer, F., Ott, T., Pfuhl, O., George, E., **Dexter, J.**, Habibi, M., Genzel, R., Reid, M. J., 2015, MNRAS, 453, 3234
28. “An Extended Galactic Center Excess of GeV Gamma Rays from Young Pulsars,” O’Leary, R. M., Kistler, M. D., Kerr, M., & **Dexter, J.**, 2015, arXiv:1504.02477
27. “A Black Hole Mass-Variability Time Scale Correlation at Submillimeter Wavelengths,” Bower, G. C., **Dexter, J.**, Markoff, S., Gurwell, M., Rao, R., McHardy, I., 2015, ApJL, 811, 6
26. “Statistics of X-ray flares of Sgr A\*: evidence for solar-like self-organized criticality phenomenon,” Li, Y-P., Feng, Y., Yuan, Q., Wang, D. Q., Chen, P.F., Neilsen, J., Fang, T., Zhang, S., **Dexter, J.**, 2015, ApJ, 810, 19
25. “230 GHz VLBI observations of M87: Event-Horizon-Scale Structure During an Enhanced Very-High-Energy  $\gamma$ -ray State in 2012,” Akiyama, K., Lu, R., Fish, V. L., Doeleman, S. S., Broderick, A. E., **Dexter, J.**, and 40 additional co-authors, 2015, ApJ, 807, 150
24. “Radio and Millimeter Monitoring of Sgr A\*: Constraints on the G2 Encounter and the Spectrum and Variability of Sgr A\*,” Bower, G. C., Markoff, S. B., **Dexter, J.**, and 14 additional co-authors, 2015, ApJ, 802, 69
23. “The X-ray Flux Distribution of Sagittarius A\* as Seen by *Chandra*,” Neilsen, J., Markoff, S., Nowak, M. A., **Dexter, J.**, and 9 additional co-authors, 2015, ApJ, 799, 199
22. “The Event Horizon Telescope: exploring strong gravity and accretion physics,” Ricarte, A. & **Dexter, J.**, 2015, MNRAS, 446, 1973
21. “An 8 hour characteristic variability timescale in submillimetre light curves of Sagittarius A\*,” **Dexter, J.**, Kelly, B., Bower, G. C., Marrone, D. P., Stone, J., Plambeck, R., 2014, MNRAS, 442, 2797
20. “*NuSTAR* detection of high-energy emission and fast variability from a Sagittarius A\* X-ray flare,” Barrière, N. M., Tomsick, J. A., Baganoff, F. K., Boggs, S. E., Christensen, F. E., Craig, W. W., **Dexter, J.**, and 8 additional co-authors, 2014, ApJ, 786, 46
19. “Transient jet formation and state transitions from large-scale magnetic reconnection in black hole accretion discs,” **Dexter, J.**, McKinney, J. C., Markoff, S. B., & Tchekhovskoy, A., 2014, MNRAS, 440, 2185
18. “A model of the steep power law spectra and high-frequency quasi-periodic oscillations in luminous black hole X-ray binaries,” **Dexter, J.** & Blaes, O., 2014, MNRAS, 438, 3352
17. “The Peculiar Pulsar Population of the Central Parsec,” **Dexter, J.** & O’Leary, R. M., 2014, ApJL, 738, 7

16. “Evidence for Large Temperature Fluctuations in Quasar Accretion Disks from Spectral Variability,” Ruan, J. J., Anderson, S. F., **Dexter, J.**, & Agol, E., 2014, ApJ, 783, 105
15. “A geometric crescent model for black hole images,” Bin Kamruddin, A. & **Dexter, J.**, 2013, MNRAS, 434, 765
14. “A *Chandra*/HETGS Census of X-ray Variability from Sgr A\* During 2012,” Neilsen, J., Nowak, M. A., Gammie, C., **Dexter, J.**, and 13 additional co-authors, 2013, ApJ, 774, 42
13. “Dissecting X-ray emitting gas around the center of our Galaxy,” Wang, Q. D., Nowak, M. A., Markoff, S. B., Baganoff, F. K., Nayakshin, S., Yuan, F., Cuadra, J., Davis, J., **Dexter, J.**, and 10 additional co-authors, 2013, Science, 341 (6149), 981
12. “Supernova Light Curves Powered by Fallback Accretion,” **Dexter, J.** & Kasen, D., 2013, ApJ, 772, 30
11. “Tilted black hole accretion disc models of Sgr A\*: time-variable millimetre to near-infrared emission,” **Dexter, J.** & Fragile, P. C., 2013, MNRAS, 432, 2252
10. “Self-consistent spectra from radiative GRMHD simulations of accretion onto Sgr A\*,” Drappeau, S., Dibi, S., **Dexter, J.**, Markoff, S., & Fragile, P. C., 2013, MNRAS, 431, 2872
9. “General relativistic MHD simulations of accretion onto Sgr A\*: How important are radiative losses?,” Dibi, S., Drappeau, S., Fragile, P. C., Markoff, S., & **Dexter, J.**, 2012, MNRAS, 426, 1928
8. “Inhomogeneous accretion discs and the soft states of black hole X-ray binaries,” **Dexter, J.** & Quataert, E., 2012, MNRAS Letters, 426, 71
7. “The size of the jet launching region in M87,” **Dexter, J.**, McKinney, J. C., & Agol, E., 2012, MNRAS, 421, 1517
6. “Millimeter to X-ray Flares from Sagittarius A\*,” Eckart, A., García-Marín, M., Vogel, S. N., Teuben, P., Morris, M. R., Baganoff, F., **Dexter, J.**, and 11 additional co-authors, 2012, A&A, 537, 52
5. “Observational Signatures of Tilted Black Hole Accretion Disks from Simulations,” **Dexter, J.** & Fragile, P. C., 2011, ApJ, 730, 36
4. “Quasar Accretion Disks Are Strongly Inhomogeneous,” **Dexter, J.** & Agol, E., 2011, ApJL, 727, 24
3. “The Submillimeter Bump in Sgr A\* from Relativistic MHD Simulations,” **Dexter, J.**, Agol, E., Fragile, P. C., & McKinney, J. C., 2010, ApJ, 717, 1092

2. “Millimeter Flares and VLBI Visibilities from Relativistic Simulations of Magnetized Accretion onto the Galactic Center Black Hole,” **Dexter, J.**, Agol, E. & Fragile, P. C., 2009, ApJL, 703, 142
1. “A Fast New Public Code for Computing Photon Orbits in a Kerr Spacetime,” **Dexter, J.** & Agol, E., 2009, ApJ, 696, 1616

SELECTED UNREFEREED PUBLICATIONS:

- “Spatially Resolving the AGN Broad Emission Line Region,” GRAVITY collaboration, 2019, ESO Messenger, 178, 20
- “Studying Black Holes on Horizon Scales with VLBI Ground Arrays,” Blackburn, L., Doeleman, S. S., **Dexter, J.**, et al., 2019, Astro2020 APC
- “GRAVITY+: Towards faint science, all sky milliarcsecond optical interferometric imaging,” Genzel, R., et al., including **Dexter, J.**, 7/2019
- “Galactic Center Pulsars with the ngVLA,” Bower, G.C., et al., including **Dexter, J.**, 2018, Astro2020 ASPC, 517, 793
- “First Light for GRAVITY: a new era for optical interferometry,” GRAVITY collaboration including **Dexter, J.**, 2017, ESO Messenger, 170, 10
- “High-Angular Resolution and High-Sensitivity Science Enabled by Beamformed ALMA,” Fish, V., et al., including **Dexter, J.**, 2013, arXiv:1309.3519
- “Radiative Models of Sagittarius A\* and M87 from Relativistic MHD Simulations,” **Dexter, J.**, Agol, E., Fragile, P. C., & McKinney, J. C., 2012, JPCS, 372, 012023