

# CURRICULUM VITAE

## FERYAL ÖZEL

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### RESEARCH INTERESTS

Theoretical, Computational, Nuclear, Plasma, and High Energy Astrophysics, Black Holes, Neutron Stars, High Performance Computing

### EDUCATION

Ph. D. in Physics, Harvard University 2002  
Thesis Title: The Effects of Strong Magnetic and Gravitational Fields on Neutron Star Atmospheres, Advisor: Ramesh Narayan  
M. S. in Particle Physics, Niels Bohr Institute, Denmark 1997  
Thesis Title: Search for the Supersymmetric Decays of the Higgs Boson at ALEPH  
B. S. in Applied Physics and Mathematics, Columbia University 1996  
*Summa cum Laude*, Tau Beta Pi Honor Society

### POSITIONS

Member, University of Arizona Applied Research Corporation 2020 – present  
Professor, University of Arizona 2015 – Present  
Associate Professor, University of Arizona 2009 – 2014  
Assistant Professor, University of Arizona 2005 – 2009  
Hubble Fellow, Member, Institute for Advanced Study 2002 – 2004

### VISITING POSITIONS

Visiting Professor, Member, Harvard University Black Hole Initiative 2016 – 2017  
Visiting Miller Professor, University of California Berkeley 2014  
Radcliffe Institute for Advanced Study Fellow, Harvard University 2012 – 2013

### SELECTED DISTINCTIONS AND AWARDS

Breakthrough Prize 2020  
American Astronomical Society Bruno Rossi Prize 2020  
Named Breakthrough of the Year by *Science* 2020  
NSF Diamond Achievement Award 2019  
Outstanding Achievement Award, METU 2019  
Joined JASON, Advisory group to the U.S. government on science and technology 2017  
Columbia University Annual Bishop Lecturer 2017  
Guggenheim Fellow 2016  
Elected Fellow of the American Physical Society 2015  
U.C. Berkeley Miller Visiting Professorship 2014  
American Physical Society Maria Goeppert Mayer Award 2013  
Elected to Science Academy, Turkey 2013

Harvard University Radcliffe Institute Fellowship	2012 – 2013
San Diego Astronomy Association Lucas Award	2010
Bart J. Bok Prize, Harvard University	2010
NASA Hubble Postdoctoral Fellowship	2002 – 05
Keck Fellowship, Institute for Advanced Study	2002
Van Vleck Fellowship, Harvard University	1999
Kostrup Prize, Niels Bohr Institute	1997
Salutatorian, Tau Beta Pi Honor Society, Columbia University	1996
Applied Mathematics Faculty Award, Columbia University	1996
Fu Foundation Scholarship, Columbia University	1994 – 96
CERN Research Fellowship	1995

### **PROFESSIONAL SERVICE and LEADERSHIP ROLES**

EHT Science Council member	2017 - present
Chair, NASA Astrophysics Advisory Committee	2017- 2020
Lead, EHT Modeling and Analysis Working Group	2017- 2020
Miller Institute Advisory Board member	2017- present
NANOGrav Advisory Board member	2017- present
JASON member	2017- present
Aspen Center for Physics General Member (elected)	2017- present
Guest Editor, Annual Reviews of Astronomy and Astrophysics	2017
Chair, NASA Lynx X-ray Telescope Science and Technology Definition Team	2016- present
NASA Astrophysics Advisory Committee member	2016–2017
Chandra X-ray Observatory Advisory Committee member	2013-2016
NASA Astrophysics 30 year Roadmap Team	2013
Co-Investigator, NASA NICER Mission	2010 – Present
Peer Review Panels: <i>NASA Astrophysics Theory Program</i> (chair) 2012; <i>Chandra X-ray Observatory</i> Cycles 8, 9, 11 (deputy-chair), 12 (chair) 2006, 2007, 2009, 2010; <i>NSF Astrophysics</i> 2006, 2008	
Scientific Organizing Committees: “The Space Astrophysics Landscape in the 2020s and Beyond” (Washington DC, April 2019), ”The Central Arcsecond” (Ringberg, 2018), ”Structure, Evolution, and Dynamics of Neutron Stars” (42nd COSPAR Assembly, Pasadena, 2018), ”Neutron Stars” ACP Workshop (Aspen 2017), “Emergence, Evolution and Effects of Black Holes in the Universe” ACP Workshop, (Aspen, 2016), “The phases of dense matter” INT Program and Conference (Seattle, 2016), “X-Ray Vision Workshop” (Washington DC, 2015), “Neutron Star Radii and All That Jazz” Workshop (Montreal, 2015), “15 Years of Chandra Science” Symposium (Cambridge, MA, 2014), “Nuclei in the Cosmos” Conference (Hungary, 2014), “Nuclei in the Cosmos” Conference (Australia 2013)	
Member, American Astronomical Society	2001-present
Member, American Physical Society	2001 - present
Referee for PRL, Physical Review, ApJ, MNRAS, Nature	2000 – Present

## GRANTS

“Hybrid Kinetic-GRMHD simulations of Black Hole Accretion with Data-Calibrated Electron Physics”

NASA Astrophysics Theory Program, PI, \$470,310, 2020-2023

“Realistic Simulations of Collisionless Black Hole Accretion Flows”

National Science Foundation, PI, \$519,430, 2017-2020

“PIRE: Black Hole Astrophysics in the Era of Distributed Resources and Expertise”,

National Science Foundation, CoPI (PI: D. Psaltis), \$5,678,833, 2017-2022

“Understanding Sgr A\* with PIC Simulations of Particle Acceleration in Magnetic Reconnection”

Chandra X-ray Observatory Cycle 19 (Theory), PI, \$86,000, 2018-2020

“NASA Decadal Large Mission Concept Study”

NASA, PI, \$92,000, 2017-2020

”Globular Cluster Neutron Stars and the Determination of the Dense Matter Equation of State”

Chandra X-ray Observatory Cycle 18, CoPI (PI S. Guillot), \$92,000, 2017-2019

“MSIP: The Event Horizon Telescope Experiment”,

National Science Foundation, CoPI (PI: D. Marrone), \$781,341, 2017-2019

“X-ray Variability of Sgr A\* as a Probe of Plasma Physics in Accretion Flows”

Chandra X-ray Observatory Cycle 17 (Theory), PI, \$92,000, 2016-2017

“Neutron-star Interior Composition ExploreR (NICER)”,

NASA, UA PI (Mission PI: K. Gendreau), \$472,898, 2015-2018

“A Deep Subarray Exposure of X7 in 47 Tuc: Towards Constraining Neutron Star Structure”

Chandra X-ray Observatory Cycle 15, Co-PI (PI: Slavko Bogdanov), \$18,713, 2014

“Multi-Scale Plasma Flows Around Black Holes”

NASA Theoretical and Computational Astrophysics Network, , Co-PI (PI: J. McKinney), \$1,500,000, 2013-2016

“MRI: Acquisition of a Graphics Processor Unit-Accelerated High Performance Computer for Astrophysics, Computer Science, and Broad Numerical Research at the University of Arizona”, one of five Co-PIs, National Science Foundation, \$1,270,933, 2012

“Mapping Neutron-Star Surfaces During Thermonuclear Flashes using Archival RXTE Observations of Burst Oscillations”, Co-PI (PI: Dimitrios Psaltis)

NASA Astrophysics Data Program, \$208,068, 2012-2014

“The Apparent Surface Areas of Spinning Neutron Stars”

Chandra X-ray Observatory Cycle 13 (Theory), Co-PI (PI: D. Psaltis), \$88,000, 2012-2014

“Masses, Radii, and Spins of Compact Objects in our Galaxy”

National Science Foundation, PI, \$348,000, 2011-2014

“Measuring the Neutron Star Equation of State through Multiwavelength Observations of their Masses and Radii”

NASA Astrophysics Data Program, PI, \$301,349, 2010-2012

“X-ray Column Density towards the Low Mass X-ray binary 4U 1608-52”

Chandra X-ray Observatory Cycle 11, PI, \$19,000, 2010-2011

“An Archival Study of Supernova Remnants”

NASA Chandra X-ray Observatory Cycle 11, PI, \$79,000, 2010-2011

“A Comprehensive Study of the Spectra of X-ray Bursters”

NASA Chandra X-ray Observatory Cycle 11 (Theory), PI, \$78,000, 2010-2011

“Simulations of Early Galaxy Formation”

National Science Foundation, Co-PI (PI: R. Dave), \$354,184, 2009-2012

“Neutron Stars as Probes of Fundamental Physics”

National Science Foundation, PI, \$368,717, 2007-2011

## **SELECTED INVITED PRESENTATIONS**

“Detecting the Shadow of the Black Hole in M87” and

“Black Hole Physics with the Event Horizon Telescope”,

NASA NAC Meeting Science Talk, May 2019

UC Santa Cruz Colloquium, May 2019

Carnegie Institute Colloquium, April 2019

SLAC Colloquium, October 2018

University of Chicago Colloquium, November 2016

MIT Astrophysics Colloquium, September 2016

American Astronomical Society Winter Meeting Plenary Talk Florida, January 2016

Bilkent University Physics Colloquium, December 2015

“Revealing the Invisible Universe with the Lynx Mission”,

AAS Winter Meeting, Seattle January 2019

HEAD Meeting, Chicago, March 2018

AAS Winter Meeting, Grapevine TX, January 2017

X-Ray Vision Workshop, Washington DC, October 2015

“A New Era of Compact Objects”: Neutron Stars, Black Holes, Equation of State, and Gravitational Waves

MIT Physics Colloquium, March 2018

GSFC Astrophysics Science Division Colloquium, September 2017

Columbia University Annual Bishop Lecture, March 2017

Brown University Physics Colloquium, March 2017

Harvard ITC Colloquium, October 2016

Yale Physics Colloquium, October 2015

MIAPP Workshop on Neutron Stars, Munich, September 2015

The Neutron Star Radius and All That Jazz Conference, Montreal, July 2015

University of Zurich and ETH Joint Physics Colloquium, April 2015

Clemson University Physics Colloquium, March 2015

UCLA Astronomy Colloquium, February 2015

Selected Earlier Talks:

Rutgers Astrophysics Colloquium, October 2014

Fourth Joint Meeting of the Nuclear Physics Divs of the APS and PSJ, Hawaii, October 2014

HEAD Meeting, Chicago, August 2014

Lawrence Berkeley National Laboratory Nuclear Physics Seminar, June 2014

University of Washington Physics Colloquium, May 2014

University of California Santa Barbara Physics Colloquium, May 2014

University of California Berkeley Astronomy Colloquium, March 2014

American Physical Society Leadership Convocation Maria Goeppert Mayer Award Talk,  
College Park, MD, February 2014

The Ohio State University Astronomy Colloquium, February 2014

American Astronomical Society Meeting, Washington DC, January 2014

Supernova and Gamma-ray Bursts 2013 Conference, Kyoto, Japan, October 2013

Texas A&M Astrophysics Colloquium, October 2013

University of California Santa Cruz Astronomy Colloquium, October 2013

Harvard University Institute for Theory and Computation Colloquium, March 2013

University of Chicago Colloquium, January 2013

## **MEDIA and OUTREACH**

### **TV Documentaries, Radio, and Selected Public Talks:**

"Science and Cocktails", Copenhagen and Amsterdam, 2019

"LSST and Black Holes", Large Synoptic Survey Telescope Public Event, 2019

Plunging into the Physics of the First Black Hole Image, NPR Science Friday, 2019

"Chasing Black Holes for Grades 8-12," Zoom Classroom, 2018

"Bringing Black Holes into Focus: The Event Horizon Telescope", UA College of Science, 2019

"Black hole image: why does it look like an orange ring?", BBC Science in Action, 2019

"Black Holes: The Heart of Darkness," BBC Science in Action (Producer Jack Meegan), 2019

"Understanding the Unseen Universe," Arizona College of Science Lecture Series, 2019

"Cosmic Front Next" Washington International Business Ventures and NHK Japan, 2018

Hubble Mission Universe – Episode 2, WickMedia, 2018

"The First Picture of a Black Hole," Curiosity Stream Breakthrough Series, 2019

"EVOLUTION: The Genius Equation", WE Genius Minds Productions for Netflix distribution,  
2019

"The First Image of a Black Hole", John Michael Godier's Event Horizon, 2019

"Black Hole Apocalypse", PBS NOVA, 2018

"Black Holes: An Up Close and Personal Look", California Academy of Sciences Lecture, 2017

"Mysteries of the Cosmos", Documentary for BBC, 2016, 2017

BBC World Service, Discovery, 2016

BBC Radio 4, Inside Science, 2016

"Science and Society", Turkish-American Scientists and Scholars Association, University of Chicago,  
April 2016

"Physics at the Edge of a Black Hole", Harvard Radcliffe Institute Public Talk, December 2012

"Edge of the Universe", Turkish Radio and Television Documentary, 3 episodes, December 2012 -  
May 2013

University of Arizona Cosmic Origins Lecture Series: "Origins of Black Holes: Gravity at its Ex-  
treme", February 2011

Louis Vuitton Women's Literacy Campaign Spokesperson, November 2010

Novartis Pharmaceuticals and Medicine Awards, Keynote Speaker, April 2010

“10 Ways to Destroy the Earth”, The Universe Documentary, History Channel, 2009  
 “Clues and Puzzles from the Universe: from Galileo to Present”, International Year of Astronomy Public Lectures in Turkey and Tucson, 2009  
 “Sustainable Energy, Society, and the Environment”, Steward Public Evening Lecture, 2009  
 “My City and My Life: Astronomy in Tucson”, CNN International, 2008  
 “Extreme Properties of Neutron Stars”, University of British Columbia Public Event, 2008  
 “Sustainable Energy, Society, and the Environment”, Biosphere 2 Public Lecture, 2008  
 “Dangerous Places in the Universe”, The Universe Documentary, History Channel, 2007  
 “Big Ideas”, PBS Documentary, 2002

### **Recent Press Coverage**

Washington Post, “See a black hole for the first time in a historic image from the Event Horizon Telescope”, 2019  
 Science News, “The first picture of a black hole opens a new era of astrophysics”, 2019  
 Sky and Telescope, “Scientists Unveil First Black Hole Image”, 2019  
 Physics Today, “What it took to capture a black hole”, 2019  
 Science Magazine, “Shadowy First image of Black Hole Revealed”, 2019  
 Arizona Daily Star, “UA faculty, students part of global team that releases first photo of black hole”, 2019  
 WIRED, “Scientists Reveal the First Picture of a Black Hole”, 2019  
 KJZZ, “University of Arizona Scientists Capture First Black Hole Images”, 2019  
 The Washington Post, “She made the discovery, but a man got the Nobel. A half-century later, she’s won a \$3 million prize”, 2018  
 Sky and Telescope, “Gravitational Waves Shed Light on Neutron Star Interiors”, 2018  
 Arizona Daily Star, “2 Tucson astronomers part of PBS show on black holes“, 2018  
 UA News, “UA Leads Project on Big Data and Black Holes”, 2018  
 Physics Today, “Imaging Black Holes,” 2018  
 BBC, “Event horizon snapshot due in 2017”  
 The Economist, “Now there’s a look in your eyes, like black holes in the sky,” 2016  
 CBS News, “Telescope array on track to image black hole ”shadows,” 2016

### **TEACHING**

Graduate Radiative Processes, ISM and Star Formation	2011, 2013, 2015, 2017, 2019
Graduate High Energy Astrophysics 2019 Energy, Society, and the Environment	2009, 2011, 2012, 2013, 2016, 2018
Graduate Theoretical Astrophysics	2011, 2007, 2005
Graduate Mathematical Methods for Physics	2010
Mathematical Methods for Physics	2008, 2008
Electricity and Magnetism	Spring 2006
Quantum Physics and Relativity	2005, 2005
Introductory Physics	2004

### **Invited Lecture Series:**

Institute for Theoretical and Applied Physics Summer School “Physics of Stars”  
 (<http://web.iku.edu.tr/eisik/PhyStars/Introduction.html>), Turunc (7 lectures) 2011  
 NBIA Summer School on Stellar Collapse, Compact Objects, Supernovae, and Gamma-Ray Bursts  
 (<http://compschool2009.org>), Niels Bohr Institute, Copenhagen (3 lectures) 2009  
 “Compact Objects”, INPE (Brazilian Space Agency) Advanced Course on Astrophysics

(<http://www.das.inpe.br/school/index.htm>), Sao Paulo (5 lectures) 2007  
“Surfaces of Neutron Stars”, High Energy Astrophysics Workshop, Istanbul (5 lectures) 2004

### **Graduate Students:**

**Tyler Kupon Trent**, Ph.D. candidate, Project Title: “Plasma Effects on Black Hole Images”, expected PhD defense Spring 2023

**Carolyn Raithel**, Ph.D., May 2020, Thesis Title: “Constraining the Neutron Star Equation of State with Astrophysical Observables”

**David Ball**, Ph.D., May 2020, Thesis Title: “Magnetic Reconnection in Low-Luminosity Accretion Flows: From Microphysical Simulations to Large-Scale Models”

**Lia Medeiros**, Ph.D., March 2019, Thesis Title: “Modeling Variability in Black Hole Images”

**Michi Bauböck**, Ph.D., May 2016, Thesis Title: “Effects of Spin on Neutron-Star Observations”

**Daniel Angles-Alcazar**, Ph.D., May 2014, Thesis Title: “Modeling the Evolution of Galaxies and Massive Black Holes across Cosmic Time”

**Phillip Jenks**, M.S., 2013, Thesis Title: “Growth of Massive Black Holes by Super-Eddington Accretion”

**Andras Gaspar**, Ph.D., December 2011, Thesis Title: “Observations and Models of Infrared Debris Disk Signatures and their Evolution”

**Elizabeth Todd**, Ph.D., May 2011, Thesis Title: “Particle Astrophysics at the Galactic Center”

**Kristian Finlator**, Ph.D., August 2009, Thesis Title: “Comparing Cosmological Hydrodynamic Simulations with Observations of High-Redshift Galaxy Formation”

**Tolga Güver**, Ph.D., January 2008, Thesis Title: “X-ray Spectra of Magnetars: Theoretical Models and Applications”

**Chi-kwan Chan**, Ph.D., June 2007, Thesis Title: “Numerical Models of Magnetohydrodynamic Turbulent Flows”

### **Independent Studies and Master’s Projects:**

**Erika Wagoner** (Ph.D. student, Physics); Project Title: “Pulse Profiles from Rapidly Spinning Neutron Stars”

**Larry Camarota** (Ph.D. student, Physics); Project Title: “The Distance, Mass, and Radius of the Neutron Star in 4U 1608-52” (published in the *Astrophysical Journal*)

**Katherine Brutlag** (Ph.D. student, Astronomy); Project Title: “Growth of Supermassive Black Holes and the  $M - \sigma$  Relation”

**Michael Kruse** (PhD Student, Physics); Project Title: “Constraining the Neutron Star Equation of State using Measurements of Neutron Star Radii”

**Arif Erkoca** (PhD student; Physics); Project Title: “Photon Propagation Around Rotating Neutron Stars”

**Erica McEvoy** (PhD student; Applied Mathematics); Project Title: “Numerical Models for Multidimensional Radiative Hydrodynamic Simulations”

### **Undergraduate Research and Thesis Advisees:**

**Landen Conway**, **PIRE Research Student**, Analytic Modeling of Black Hole Images using MCMC Algorithms

**Austin Dougless**, (**Honors Program**) Honors Project in Astronomy 208, Sustainable Energy, on “Solar Energy Initiatives”

**Antonio Santos Villarreal**, Independent Study, Senior Thesis (undergraduate, senior, Astronomy and Physics); Project Title: “On the Mass Distribution and Birth Masses of Neutron Stars” (published in the *Astrophysical Journal*), went on to graduate school in Physics at U. of Pittsburgh

**David Schenck**, Independent Study (undergraduate, senior, Astronomy and Physics); Project Title: “Magnetic Field Structure of Neutron Stars”, went on to graduate school in Astronomy at U. of Colorado

**Chris Limbach**, Independent Study (undergraduate, senior, Astronomy and Physics); Project Title: “The Redshift Evolution of the Tully-Fisher Relation as a Test of Modified Gravity” (published in the Astrophysical Journal), went on to graduate school in Aeronautics at Princeton

**Patricia Wroblewski** Independent Study, Senior Thesis, (undergraduate, senior, Astronomy and Physics); Project Title: “Hydrogen Column Density Measurements in High Resolution X-ray Spectra” (published in the Astrophysical Journal), went on to work at Raytheon

**Kara Farnsworth** (undergraduate, senior, Astronomy and Physics); Project Title: “Images of the Accretion Flow around the Black Hole at the Galactic Center”, went on to graduate school in Physics at U. of Washington

**David Hernandez** (independent study), Project Title: “Rapidly Rotating Neutron Star Spacetimes”, went on to graduate school in Astrophysics at MIT

**Sui Ann Mao** (independent study and senior honors thesis); Project Title: “Synchrotron Radiation from Magnetars and Applications to IR Emission from Anomalous X-ray Pulsars”, went on to graduate school in Astronomy at Harvard



# LIST OF PUBLICATIONS

## FERYAL ÖZEL

1. Psaltis, D., Medeiros, L., Christian, P., **Özel, F.** and the EHT Collaboration 2020. A Gravitational Test Beyond the First Post-Newtonian Order With The Shadow of the M87 Black Hole. *Physical Review Letters*, in press
2. Kim, J.-Y. and 352 colleagues 2020. Event Horizon Telescope imaging of the archetypal blazar 3C 279 at an extreme 20 microarcsecond resolution. *Astronomy and Astrophysics* 640, 69
3. Medeiros, L., Psaltis, D., **Özel, F.** 2020. A Parametric Model for the Shapes of Black Hole Shadows in Non-Kerr Spacetimes. *The Astrophysical Journal* 896, 7
4. Gold, R. and 207 colleagues 2020. Verification of Radiative Transfer Schemes for the EHT. *The Astrophysical Journal* 897, 148
5. Echiburú, C. S., Guillot, S., Zhao, Y., Heinke, C. O., **Özel, F.**, Webb, N. A. 2020. Spectral analysis of the quiescent low-mass X-ray binary in the globular cluster M30. *Monthly Notices of the Royal Astronomical Society* 495, 4508
6. Ball, D., **Özel, F.**, Christian, P., Chan, C.-K., Psaltis, D. 2020. A Plasmoid Model for the Sgr A\* Flares Observed with GRAVITY and Chandra. arXiv e-prints arXiv:2005.14251
7. Roelofs, F., and 207 colleagues 2020. SYMBA: An end-to-end VLBI synthetic data generation pipeline. arXiv e-prints arXiv:2004.01161
8. Psaltis, D., **Özel, F.**, and 8 colleagues 2020. Markov Chains for Horizons (MARCH). I. Identifying Biases in Fitting Theoretical Models to Event Horizon Telescope Observations. arXiv e-prints arXiv:2005.09632
9. Roelofs, F., and 208 colleagues 2020. SYMBA: An end-to-end VLBI synthetic data generation pipeline. Simulating Event Horizon Telescope observations of M 87. *Astronomy and Astrophysics* 636, A5
10. Porth, O., and 220 colleagues 2019. The Event Horizon General Relativistic Magnetohydrodynamic Code Comparison Project. *The Astrophysical Journal Supplement Series* 243, 26
11. Psaltis, D., Medeiros, L., Lauer, T. R., Chan, C.-K., **Özel, F.** 2020. Discretization and Filtering Effects on Black Hole Images Obtained with the Event Horizon Telescope. arXiv e-prints arXiv:2004.06210
12. Raithel, C., **Özel, F.**, Psaltis, D. 2020. Optimized statistical approach for combining multi-messenger data for neutron star equation of state inference. arXiv e-prints arXiv:2004.00656
13. Lockhart, W., Gralla, S. E., **Özel, F.**, Psaltis, D. 2019. X-ray light curves from realistic polar cap models: inclined pulsar magnetospheres and multipole fields. *Monthly Notices of the Royal Astronomical Society* 490, 1774
14. Bogdanov, S., and 29 colleagues 2019. Constraining the Neutron Star Mass-Radius Relation and Dense Matter Equation of State with NICER. I. The Millisecond Pulsar X-Ray Data Set. *The Astrophysical Journal* 887, L25

15. Raithel, C. A., **Özel, F.** 2019. Measurement of the Nuclear Symmetry Energy Parameters from Gravitational-wave Events. *The Astrophysical Journal* 885, 121
16. Ball, D., Sironi, L., **Özel, F.** 2019. The Mechanism of Electron Injection and Acceleration in Transrelativistic Reconnection. *The Astrophysical Journal* 884, 57
17. Raithel, C. A., **Özel, F.**, Psaltis, D. 2019. Finite-temperature Extension for Cold Neutron Star Equations of State. *The Astrophysical Journal* 875, 12
18. Event Horizon Telescope Collaboration, and 214 colleagues 2019. First M87 Event Horizon Telescope Results. VI. The Shadow and Mass of the Central Black Hole. *The Astrophysical Journal* 875, L6
19. Event Horizon Telescope Collaboration, and 221 colleagues 2019. First M87 Event Horizon Telescope Results. V. Physical Origin of the Asymmetric Ring. *The Astrophysical Journal* 875, L5
20. Event Horizon Telescope Collaboration, and 215 colleagues 2019. First M87 Event Horizon Telescope Results. IV. Imaging the Central Supermassive Black Hole. *The Astrophysical Journal* 875, L4
21. Event Horizon Telescope Collaboration, and 217 colleagues 2019. First M87 Event Horizon Telescope Results. III. Data Processing and Calibration. *The Astrophysical Journal* 875, L3
22. Event Horizon Telescope Collaboration, and 341 colleagues 2019. First M87 Event Horizon Telescope Results. II. Array and Instrumentation. *The Astrophysical Journal* 875, L2
23. Event Horizon Telescope Collaboration, and 348 colleagues 2019. First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole. *The Astrophysical Journal* 875, L1
24. Bauböck, M., Psaltis, D., **Özel, F.** 2019. Atmospheric Structure and Radiation Pattern for Neutron-star Polar Caps Heated by Magnetospheric Return Currents. *The Astrophysical Journal* 872, 162
25. Chan, C.-K., Medeiros, L., **Özel, F.**, Psaltis, D. 2018. GRay2: A General Purpose Geodesic Integrator for Kerr Spacetimes. *The Astrophysical Journal* 867, 59
26. Strohmayer, T. E., and 14 colleagues 2018. NICER Discovers mHz Oscillations in the Clocked Burster GS 1826-238. *The Astrophysical Journal* 865, 63
27. Medeiros, L., Lauer, T. R., Psaltis, D., **Özel, F.** 2018. Principal Component Analysis as a Tool for Characterizing Black Hole Images and Variability. *The Astrophysical Journal* 864, 7
28. Wilson-Hodge, C. A., and 22 colleagues 2018. NICER and Fermi GBM Observations of the First Galactic Ultraluminous X-Ray Pulsar Swift J0243.6+6124. *The Astrophysical Journal* 863, 9
29. Ball, D., Sironi, L., **Özel, F.** 2018. Electron and Proton Acceleration in Trans-relativistic Magnetic Reconnection: Dependence on Plasma Beta and Magnetization. *The Astrophysical Journal* 862, 80
30. Raithel, C. A., **Özel, F.**, Psaltis, D. 2018. Tidal Deformability from GW170817 as a Direct Probe of the Neutron Star Radius. *The Astrophysical Journal* 857, L23

31. Medeiros, L., Chan, C.-k., **Özel, F.**, Psaltis, D., Kim, J., Marrone, D., Sądowski, A. 2018. GRMHD Simulations of Visibility Amplitude Variability for Event Horizon Telescope Images of Sgr A\*. *The Astrophysical Journal* 856, 163
32. Raithel, C. A., Sukhbold, T., **Özel, F.** 2018. Confronting Models of Massive Star Evolution and Explosions with Remnant Mass Measurements. *The Astrophysical Journal* 856, 35
33. Ball, D., **Özel, F.**, Psaltis, D., Chan, C.-K., Sironi, L. 2018. The Properties of Reconnection Current Sheets in GRMHD Simulations of Radiatively Inefficient Accretion Flows. *The Astrophysical Journal* 853, 184
34. Raithel, C. A., **Özel, F.**, Psaltis, D. 2017. From Neutron Star Observables to the Equation of State. II. Bayesian Inference of Equation of State Pressures. *The Astrophysical Journal* 844, 156
35. Medeiros, L., Chan, C.-k., **Özel, F.**, Psaltis, D., Kim, J., Marrone, D., Sądowski, A. 2017. Variability in GRMHD simulations of Sgr A\*: Implications for EHT closure phase observations. *The Astrophysical Journal* 844, 35
36. Anglés-Alcázar, D., Davé, R., Faucher-Giguère, C.-A., **Özel, F.**, Hopkins, P. F. 2017. Gravitational torque-driven black hole growth and feedback in cosmological simulations. *Monthly Notices of the Royal Astronomical Society* 464, 2840
37. Kim, J., Marrone, D. P., Chan, C.-K., Medeiros, L., **Özel, F.**, Psaltis, D. 2016. Bayesian Techniques for Comparing Time-dependent GRMHD Simulations to Variable Event Horizon Telescope Observations. *The Astrophysical Journal* 832, 156
38. **Özel, F.**, Psaltis, D., Arzoumanian, Z., Morsink, S., Baubock, M. 2016. Measuring Neutron Star Radii via Pulse Profile Modeling with NICER. *The Astrophysical Journal*, 832, 92
39. Bogdanov, S., Heinke, C. O., **Özel, F.**, Güver, T. 2016. Neutron Star Mass–Radius Constraints of the Quiescent Low-mass X-Ray Binaries X7 and X5 in the Globular Cluster 47 Tuc. *The Astrophysical Journal* 831, 184
40. Fong, W., Metzger, B. D., Berger, E., **Özel, F.** 2016. Radio Constraints on Long-lived Magnetar Remnants in Short Gamma-Ray Bursts. *The Astrophysical Journal* 831, 141
41. Raithel, C. A., **Özel, F.**, Psaltis, D. 2016. From Neutron Star Observables to the Equation of State. I. An Optimal Parametrization. *The Astrophysical Journal* 831, 44
42. **Özel, F.**, Freire, P. 2016. Masses, Radii, and the Equation of State of Neutron Stars. *Annual Review of Astronomy and Astrophysics* 54, 401-440
43. Güver, T., **Özel, F.**, Marshall, H., Psaltis, D., Guainazzi, M., Díaz-Trigo, M. 2016. Systematic Uncertainties in the Spectroscopic Measurements of Neutron-star Masses and Radii from Thermonuclear X-Ray Bursts. III. Absolute Flux Calibration. *The Astrophysical Journal* 829, 48
44. Ball, D., **Özel, F.**, Psaltis, D., Chan, C.-k. 2016. Particle Acceleration and the Origin of X-Ray Flares in GRMHD Simulations of SGR A. *The Astrophysical Journal* 826, 77
45. Foight, D. R., Güver, T., **Özel, F.**, Slane, P. O. 2016. Probing X-Ray Absorption and Optical Extinction in the Interstellar Medium Using Chandra Observations of Supernova Remnants. *The Astrophysical Journal* 826, 66

46. Antoniadis, J., Tauris, T. M., **Özel, F.**, Barr, E., Champion, D. J., Freire, P. C. C. 2016. The millisecond pulsar mass distribution: Evidence for bimodality and constraints on the maximum neutron star mass. *The Astrophysical Journal*, submitted (ArXiv e-prints arXiv:1605.01665)
47. Watts, A. L., and 17 colleagues 2016. Colloquium: Measuring the neutron star equation of state using x-ray timing. *Reviews of Modern Physics* 88, 021001
48. Raithel, C. A., **Özel, F.**, Psaltis, D. 2016. Model-independent inference of neutron star radii from moment of inertia measurements. *Physical Review C* 93, 032801
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