

Department of Physics, Enrico Fermi Institute,
Department of Astronomy & Astrophysics, and
Kavli Institute for Cosmological Physics
University of Chicago, Chicago IL 60637
danielholz.com

EDUCATION

Princeton University

A.B., Physics *cum laude*, Spring 1992

University of Chicago

M.S., Physics, Fall 1994

Ph.D., Physics, Summer 1998

EXPERIENCE

Professor (2018—)

Enrico Fermi Institute, Department of Physics, Department of Astronomy & Astrophysics,
and Kavli Institute for Cosmological Physics, University of Chicago

Associate Professor (2015–2018)

Enrico Fermi Institute, Department of Physics, Department of Astronomy & Astrophysics,
and Kavli Institute for Cosmological Physics, University of Chicago

Assistant Professor (2011–2014)

Enrico Fermi Institute, Department of Physics, and Kavli Institute for Cosmological Physics,
The University of Chicago

Staff Member (2007–2011)

Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico

Feynman Fellow (2004–2007)

Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico

Center Fellow (2003–2004)

Center for Cosmological Physics, University of Chicago, Chicago, Illinois

KITP Fellow (2000–2003)

Kavli Institute for Theoretical Physics, University of California, Santa Barbara, California

Postdoctoral Fellow (1998–99)

Albert Einstein Institute, Max-Planck-Institut für Gravitationsphysik, Potsdam, Germany

FELLOWSHIPS AND AWARDS

American Physical Society Fellow (2017)**Kavli Fellow** (2017)

Frontiers of Science, National Academy of Sciences

Breakthrough Prize in Fundamental Physics (2016)

awarded to the LIGO collaboration

Gruber Cosmology Prize (2016)

awarded to the LIGO collaboration

Quantrell Award for Excellence in Undergraduate Teaching (2015)

GRANTS

NSF Award PHY-1708081, PI

From First Detections to Gravitational-Wave Astrophysics; 2017–2020

NSF CAREER Award PHY-1151836, PI

Hearing and Seeing the Universe Through Multi-Messenger Astronomy; 2012–2017

Physics Frontier Center NSF-1125897, Senior Personnel (Michael Turner, PI)

Kavli Institute for Cosmological Physics: Pushing Cosmology to the Edge; 2011–2017

Laboratory Directed Research and Development DOE–20090518ER, PI

General Relativity as a Probe of Cosmology; 2009–2012

Laboratory Directed Research and Development DOE–20080080ER, PI

Finding the First Cosmic Explosions; 2007–2010

SERVICE/OUTREACH

Bulletin of the Atomic ScientistsMember of the Science and Security Board, which sets the Doomsday Clock (2017–)**Gravitational wave distance calculator****Chair-line, American Physical Society Topical Group in Gravitation**Highest elected position in the US general relativity community (2012–2015)**Committees/Panels**

APS April Meeting Program Committee Chair (2016–17)

Physics Department Climate Committee Chair (2015–16)

Society of Women in Physics Faculty Advisor (2015–)

UChicago Physical Sciences Teaching Committee (2013–)

KICP Fellows Lead (2011–)

UChicago Provost Faculty Working Group for African Institute for
Mathematical Sciences (AIMS) (2015–16)

UChicago Computations in Science seminar series co-organizer (2013–)

APS Task Force on Meetings (2013–14)

LISA/eLISA Gravitational-Wave Science Analysis Group (2013–)

NSF review panels (astronomy & gravity, 5 panels over last 10 years)

Meetings/Conferences (principal organizer)Aspen Winter Conference, “Astrophysics with Gravitational-Wave Populations, February 2019KITP Program, “The New Era of Gravitational-Wave Physics and Astrophysics”, Summer 2019Aspen Winter Conference, “Dawning Era of Gravitational-Wave Astrophysics”, February 2017

APS April Meeting (Chair), Washington D.C., January 2017. > 1,200 talks

KITP Rapid Response Workshop, “Astrophysics from LIGO’s first black holes”, August 2016

COSMO-14, Chicago 2014.

LIGO GW-Astronomy LoI meeting, Chicago 2013.

APS April Meeting, Denver 2013. organized the 23 GGR (relativity) sessions

22nd Midwest Relativity Meeting, Chicago 2012SUSY11 (local organizer), Chicago 2011

SERVICE/OUTREACH (continued)

Miscellaneous Outreach

Media: NPR Science Friday, New York Times, USA Today, Quanta, WTTW, WGN, Scientific American, Science News, UPI, KMOX, WHPK, WVIK, and WBEZ

PBS video: “Gravitational Waves 101: How to Hear the Universe” (2016)

“Conveying Gravity: Communicating the Discovery of Gravitational Waves”

APS News **25**, 8 (The Back Page) (2016)

Life-Long Learning lecture “Discovery of Gravitational Waves”, Chicago Cultural Center (2016)

Pint of Science presentation “Listening to Colliding Black Holes”, Debonair Club (2016)

Public Lecture “Listening to the Universe”, Mind Museum, Manila, Philippines (2015)

Volunteer at the Adler Planetarium “Astronomy Conversations” in the Adler Science

Visualization Laboratory (2013–2015)

Public lecture at screening of “Gravity” (2014), “Interstellar” (2015)

Consultant for the Science & Entertainment Exchange, a program of the National Academy of Sciences (2014–2015)

Public Dialog “Black Holes Whisper Sweet Somethings”, Aspen Center for Physics (2014)

“Gravitational Waves” for “Explain it in 60 seconds” (*Symmetry* magazine, 2012)

cosmicvariance.com (2007–2011)

Heinz R. Pagels Memorial Public Lecture (2011), “Listening to the Universe with Gravitational Waves”, Aspen Center for Physics

Appearance on *Stephen Hawking’s Universe*, six episode BBC documentary

STUDENTS/POSTDOCS

Maya Fishbach (2016–): University of Chicago graduate student in her 3rd year

Zoheyr Doctor (2015–): University of Chicago graduate student in his 4th year

Reed Essick (2017–): Postdoctoral Fellow, Kavli Institute for Cosmological Physics

Ben Farr (2014–2017): McCormick Postdoctoral Fellow at the University of Chicago. Now Assistant Professor at the University of Oregon

Hsin-Yu Chen (2012–2017): University of Chicago graduate student. Now Postdoctoral Fellow at Harvard University

Alexia Schulz (2010–2011): Director’s Fellow at LANL. Now at Lincoln Laboratories

Chris Belczynski (2007–2010): Oppenheimer Fellow at LANL. Now Professor at the University of Warsaw

Andrew Wetzel (2005–2007): LANL student prior to and during Ph.D. studies at Berkeley with Martin White. Now Assistant Professor at UC Davis

TEACHING

Cosmology (PHYS371; Spring 2012)

Spacetime and Black Holes (PHYS264; Fall 2012, 2013, 2016)

Everyday Physics (PHSC113; Winter 2013, co-taught with Bob Geroch)

Spacetime, Black holes, Gravitational Waves, & Cosmology (PHYS 264/265; 2 quarter sequence 2014/15, 2015/16)

The Teaching & Learning of Physics (PHYS300; Fall 2016)

Gravitational Waves (PHYS460; Fall 2017)

CITATIONS (as of 10/2018; excluding LIGO papers without significant contributions)

of citations: > 20,000

h-index: > 60

PUBLICATIONS (click on titles to link to articles)

1. **Spin dynamics of the LAGEOS satellite in support of a measurement of the Earth's gravitomagnetism**
S. Habib, D.E. Holz, A. Kheyfets, R.A. Matzner, W.A. Miller, & B.W. Tolman
Phys. Rev. D **50**, 6068 (1994)
2. **The issue of time evolution in quantum gravity**
A. Kheyfets, D.E. Holz, & W.A. Miller
Int. J. Mod. Phys. A **11**, 2977 (1996)
3. **Photon statistics limits for Earth-based parallax measurements of MACHO events**
D.E. Holz & R.M. Wald
Astrophys. J. **471**, 64 (1996)
4. **A new method for determining cumulative gravitational lensing effects in inhomogeneous universes**
D.E. Holz & R.M. Wald
Phys. Rev. D **58**, 063501 (1998)
5. **Lensing and high-*z* supernova surveys**
D.E. Holz
Astrophys. J. Lett. **506**, L1 (1998)
6. **Gravitational lensing limits on the average redshift of gamma-ray bursts**
D.E. Holz, M.C. Miller, & J.M. Quashnock
Astrophys. J. **510**, 54 (1999)
7. **Apparent horizons in simplicial Brill wave initial data**
A.P. Gentle, D.E. Holz, W.A. Miller, & J.A. Wheeler
Class. Quant. Grav. **16**, 1979 (1999)
8. **Limits on the density of compact objects from high redshift supernovae**
U. Seljak & D.E. Holz
Astron. Astroph. Lett. **351**, L10 (1999)
9. **Symmetry without symmetry: numerical simulation of axisymmetric systems using Cartesian grids**
M. Alcubierre, S. Brandt, B. Bruegmann, D.E. Holz, E. Seidel, R. Takahashi, J. Thornburg
Int. J. Mod. Phys. D **10**, 273 (2001)
10. **Constant crunch coordinates for black hole simulations**
A.P. Gentle, D.E. Holz, A. Kheyfets, P. Laguna, W.A. Miller, & D.M. Shoemaker
Phys. Rev. D **63**, 064024 (2001)
11. **Seeing double: strong gravitational lensing of high-redshift supernovae**
D.E. Holz
Astrophys. J. Lett. **556**, L71 (2001)
12. **Collisional dark matter and scalar phantoms**
D.E. Holz & A. Zee
Phys. Lett. B **517**, 239 (2001)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

-
13. **Gravitational wave emission from core-collapse of massive stars**
C.L. Fryer, D.E. Holz, & S.A. Hughes
Astrophys. J. **565**, 430 (2002)
 14. **Hydrostatic expansion and spin changes during Type I X-ray bursts**
A. Cumming, S.M. Morsink, L. Bildsten, J.L. Friedman, & D.E. Holz
Astrophys. J. **564**, 343 (2002)
 15. **A universal probability distribution function for weak-lensing amplification**
Y. Wang, D.E. Holz, & D. Munshi
Astrophys. J. Lett. **572**, L15 (2002)
 16. **Retro-MACHOs: π in the sky?**
D.E. Holz & J.A. Wheeler
Astrophys. J. **578**, 330 (2002)
featured in *Nature, Science, New Scientist, Scientific American, etc.*
 17. **On the remarkable spectrum of a non-Hermitian random matrix model**
D.E. Holz, H. Orland, & A. Zee
J. Phys. A **36**, 3385 (2003)
 18. **Corrective lenses for high redshift supernovae**
N. Dalal, D.E. Holz, X. Chen, & J.A. Frieman
Astrophys. J. Lett. **585**, L11 (2003)
 19. **How black holes get their kicks: gravitational radiation recoil revisited**
M. Favata, S.A. Hughes, & D.E. Holz
Astrophys. J. Lett. **607**, L5 (2004)
 20. **Consequences of gravitational radiation recoil**
D. Merritt, M. Milosavljević, M. Favata, S.A. Hughes, & D.E. Holz
Astrophys. J. Lett. **607**, L9 (2004)
 21. **Gravitational waves from stellar collapse: correlations to explosion asymmetries**
C.L. Fryer, D.E. Holz, & S.A. Hughes
Astrophys. J. **609**, 288 (2004)
 22. **Using gravitational-wave standard sirens**
D.E. Holz & S.A. Hughes
Astrophys. J. **629**, 15 (2005)
 23. **Safety in numbers: Gravitational lensing degradation of the luminosity distance-redshift relation**
D.E. Holz & E.V. Linder
Astrophys. J. **631**, 678 (2005)
 24. **Precision determination of the mass function of dark matter halos**
M.S. Warren, K. Abazajian, D.E. Holz, L. Teodoro
Astrophys. J. **646**, 881 (2006)
 25. **Cosmology from supernova magnification maps**
A. Cooray, D.E. Holz, & D. Huterer
Astrophys. J. Lett. **637**, L77 (2006)
 26. **Problems with pencils: lensing covariance of supernova distance measurements**
A. Cooray, D. Huterer, & D.E. Holz
Phys. Rev. Lett. **96**, 021301 (2006)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

-
27. **Short GRB and binary black hole standard sirens as a probe of dark energy**
N. Dalal, D.E. Holz, S.A. Hughes, B. Jain
Phys. Rev. D **74**, 063006 (2006)
 28. **The clustering of massive halos**
A.R. Wetzel, J.D. Cohn, M. White, D.E. Holz, & M.S. Warren
Astrophys. J., **656**, 139 (2007)
 29. **Direct reconstruction of the dark energy scalar-field potential**
C. Li, D.E. Holz, & A. Cooray
Phys. Rev. D, **75**, 103503 (2007)
 30. **A new population of high redshift short-duration gamma-ray bursts**
E. Berger, D.B. Fox, P.A. Price, E. Nakar, A. Gal-Yam, D.E. Holz, et al.
Astrophys. J. **664**, 1000 (2007)
 31. **Narrowing constraints with type Ia supernovae: converging on a cosmological constant**
S. Sullivan, A. Cooray, & D.E. Holz
J. Cosmology Astropart. Phys. **09**, 4 (2007)
 32. **CMB cluster lensing: Cosmography with the longest lever arm**
W. Hu, D.E. Holz, & C. Vale
Phys. Rev. D (Rapid Communications) **76**, 127301 (2007)
 33. **Lensing and supernovae: quantifying the bias on the dark energy equation of state**
D. Sarkar, A. Amblard, D.E. Holz, & A. Cooray
Astrophys. J. **678**, 1 (2008)
 34. **Close pairs as proxies for galaxy cluster mergers**
A. R. Wetzel, A.E. Schulz, D.E. Holz, & M.S. Warren
Astrophys. J. **683**, 1 (2008)
 35. **Beyond two dark energy parameters**
D. Sarkar, S. Sullivan, S. Joudaki, A. Amblard, D.E. Holz, & A. Cooray
Phys. Rev. Lett. **100**, 241302 (2008)
 36. **Toward a halo mass function for precision cosmology**
J. Tinker, A. Kravtsov, A. Klypin, K. Abazajian, M. Warren, G. Yepes, S. Gottlober, D.E. Holz
Astrophys. J. **688**, 709 (2008)
 37. **Implications of Two Type Ia Supernova Populations for Cosmological Measurements**
D. Sarkar, A. Amblard, A. Cooray, D.E. Holz
Astrophys. J. Lett. **684**, L13 (2008)
 38. **No evidence for dark energy dynamics from a global analysis of cosmological data**
P. Serra, A. Cooray, D.E. Holz, A. Melchiorri, P. Stefania, & D. Sarkar
Phys. Rev. D **80**, 121302 (2009)
 39. **Weak lensing and dark energy: the impact of dark energy on nonlinear dark matter clustering**
S. Joudaki, A. Cooray, & D.E. Holz
Phys. Rev. D **80**, 023003 (2009)
 40. **Ultra-high precision cosmology from gravitational waves**
C. Cutler & D.E. Holz
Phys. Rev. D **80**, 104009 (2009)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

41. **On The Origin Of The Highest Redshift Gamma-Ray Bursts**
K. Belczynski, D.E. Holz, C.L. Fryer, E. Berger, D.H. Hartmann, & B. O'Shea
Astrophys. J. **708**, 117 (2010)
42. **The effect of metallicity on the detection prospects for gravitational waves**
K. Belczynski, M. Dominik, T. Bulik, R. O'Shaughnessy, C. Fryer, & D.E. Holz
Astrophys. J. Lett **715**, 138 (2010)
43. **Reducing the weak lensing noise for the gravitational wave Hubble diagram using the non-Gaussianity of the magnification distribution**
C.M. Hirata, D.E. Holz, & C. Cutler
Phys. Rev. D **81**, 124046 (2010)
44. **Measuring dark energy spatial inhomogeneity with supernova data**
A. Cooray, D.E. Holz, & R. Caldwell
JCAP **11**, 015 (2010)
45. **Exploring short gamma-ray bursts as gravitational-wave standard sirens**
S. Nissanke, D.E. Holz, S.A. Hughes, N. Dalal, & J.L. Sievers
Astrophys. J. **725**, 496 (2010)
46. **Outflowing Galactic Winds in Post-starburst and AGN Host Galaxies at $0.2 < z < 0.8$**
A.L. Coil, B.J. Weiner, D.E. Holz, M.C. Cooper, R. Yan, & J. Aird
Astrophys. J. **743**, 46 (2011)
47. **Localizing compact binary inspirals on the sky using ground-based gravitational wave interferometers**
S.M. Nissanke, J.L. Sievers, N. Dalal, & D.E. Holz
Astrophys. J. **739**, 99 (2011)
48. **Compact Remnant Mass Function: Dependence on the Explosion Mechanism and Metallicity**
C.L. Fryer, K. Belczynski, G. Wiktorowicz, M. Dominik, V. Kalogera, & D.E. Holz
Astrophys. J. **749**, 91 (2012)
49. **Evidence for Type Ia Supernova Diversity from Ultraviolet Observations with the Hubble Space Telescope**
X. Wang et al.
Astrophys. J. **749**, 126 (2012)
50. **Double Compact Objects I: The Significance Of The Common Envelope On Merger Rates**
M. Dominik, K. Belczynski, C. Fryer, D.E. Holz, E. Berti, et al.
Astrophys. J. **759** 52 (2012)
51. **Missing Black Holes Unveil the Supernova Explosion Mechanism**
K. Belczynski, G. Wiktorowicz, C. Fryer, D.E. Holz, & V. Kalogera
Astrophys. J. **757**, 91 (2012)
52. **The Most Massive Objects in the Universe**
D.E. Holz & S. Perlmutter
Astrophys. J. Lett. **755**, 36 (2012)
53. **Finding the First Cosmic Explosions I: Pair-Instability Supernovae**
D.J. Whalen et al.
Astrophys. J. **777**, 110 (2013)

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PUBLICATIONS (click on titles to link to articles)

-
54. **Finding the First Cosmic Explosions II: Core-Collapse Supernovae**
D.J. Whalen et al.
Astrophys. J. **768**, 95 (2013)
 55. **Double Compact Objects II: Cosmological Merger Rates**
M. Dominik, K. Belczynski, C. Fryer, D.E. Holz, E. Berti, et al.
Astrophys. J. **779**, 72 (2013)
 56. **Seeing the First Supernovae at the Edge of the Universe with JWST**
D.J. Whalen, C.L. Fryer, D.E. Holz, et al.
Astrophys. J. Lett. **762**, L6 (2013)
 57. **Illuminating the Primeval Universe with Type II_n Supernovae**
D.J. Whalen et al.
Astrophys. J. **768**, 195 (2013)
 58. **Supermassive Seeds for Supermassive Black Holes**
J.L. Johnson, D.J. Whalen, H. Li, & D.E. Holz
Astrophys. J. **771**, 116 (2013)
 59. **Detecting Ancient Supernovae at $z \sim 5$ –12 with CLASH**
D.J. Whalen, J. Smidt, J.L. Johnson, D.E. Holz, M. Stiavelli, & C.L. Fryer
arXiv:1312.6330 (2013)
 60. **Gamma-ray Burst Beaming and Gravitational-Wave Observations**
H.-Y. Chen & D.E. Holz
Phys. Rev. Lett. **111**, 181101 (2013)
 61. **Determining the Hubble Constant from Gravitational Wave Observations of Merging Compact Binaries**
S. Nissanke, D.E. Holz, N. Dalal, S.A. Hughes, J.L. Sievers, & C.M. Hirata
arXiv:1307.2638 (2013)
 62. **The Formation and Gravitational-Wave Detection of Massive Stellar Black Hole Binaries**
K. Belczynski, A. Buonanno, M. Cantiello, C.L. Fryer, D.E. Holz, I. Mandel,
M.C. Miller, & M. Walczak
Astrophys. J. **789**, 120 (2014)
 63. **Dark Sky Simulations: Early Data Release**
S.W. Skillman, M.S. Warren, M.J. Turk, R.H. Wechsler, D.E. Holz, & P.M. Sutter
arXiv:1407.2600 (2014)
 64. **Double Compact Objects III: Gravitational Wave Detection Rates**
M. Dominik, E. Berti, R. O’Shaughnessy, I. Mandel, K. Belczynski, C.L. Fryer,
D.E. Holz, T. Bulik, & F. Pannarale
Astrophys. J. **806**, 263 (2015)
 65. **The Loudest Gravitational Wave Events**
H.-Y. Chen & D.E. Holz
arXiv:1409.0522 (2015)
 66. **Neutron Stars versus Black Holes: Probing the Mass Gap with LIGO/Virgo**
T.B. Littenberg, B. Farr, S. Coughlin, V. Kalogera, & D.E. Holz
Astrophys. J. Lett. **807** 24 (2015)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

-
67. **Cosmic variance in the nanohertz gravitational wave background**
E. Roebber, G. Holder, D.E. Holz, & M. Warren
Astrophys. J. **819** 163 (2016)
 68. **Compact Binary Merger Rates: Comparison with LIGO/Virgo Upper Limits**
K. Belczynski, S. Repetto, D.E. Holz, et al.
Astrophys. J. **819** 108 (2016)
 69. **Observation of Gravitational Waves from a Binary Black Hole Merger**
B.P. Abbott et al.
Phys. Rev. Lett. **116** 011102 (2016)
 70. **Astrophysical Implications of the Binary Black-hole Merger GW150914**
B.P. Abbott et al.
Astrophys. J. Lett. **818** 22 (2016)
 71. **GW150914: First results from the search for binary black hole coalescence with Advanced LIGO**
B.P. Abbott et al.
Phys. Rev. D **93** 122003 (2016)
 72. **Tests of General Relativity with GW150914**
B.P. Abbott et al.
Phys. Rev. Lett. **116** 1101 (2016)
 73. **Properties of the Binary Black Hole Merger GW150914**
B.P. Abbott et al.
Phys. Rev. Lett. **116** 241102 (2016)
 74. **The Rate of Binary Black Hole Mergers Inferred from Advanced LIGO Observations Surrounding GW150914**
B.P. Abbott et al.
Astrophys. J. Lett. **833** 1 (2016)
 75. **A Dark Energy Camera Search for an Optical Counterpart to the First Advanced LIGO Gravitational Wave Event GW150914**
M. Soares-Santos et al.
Astrophys. J. Lett. **823** 33 (2016)
 76. **A Dark Energy Camera Search for Missing Supergiants in the LMC After the Advanced LIGO Gravitational Wave Event GW150914**
J. Annis et al.
Astrophys. J. Lett. **823** 34 (2016)
 77. **Going the Distance: Mapping Host Galaxies of LIGO and Virgo Sources in Three Dimensions Using Local Cosmography and Targeted Follow-up**
L.P. Singer, H.-Y. Chen, D.E. Holz, et al.
Astrophys. J. Lett. **829** 15 (2016)
 78. **Localization and Broadband Follow-up of the Gravitational-wave Transient GW150914**
B.P. Abbott et al.
Astrophys. J. Lett. **826** 13 (2016)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

-
79. **The origin and evolution of LIGO's first gravitational-wave source**
K. Belczynski, D.E. Holz, T. Bulik, & R. O'Shaughnessy
Nature **534** 512 (2016)
 80. **GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence**
B.P. Abbott et al.
Phys. Rev. Lett. **116** 241103 (2016)
 81. **A DECam Search for an Optical Counterpart to the LIGO Gravitational-wave Event GW151226**
P.S. Cowperthwaite et al.
Astrophys. J. Lett **826** 29 (2016)
 82. **The Effect of Pair-Instability Mass Loss on Black Hole Mergers**
K. Belczynski et al.
Astron. Astrophys. **594** 97 (2016)
 83. **Upper limits on the rates of binary neutron star and neutron-star–black-hole mergers from Advanced LIGO's first observing run**
B.P. Abbott et al.
Astrophys. J. Lett. **832** 21 (2016)
 84. **The basic physics of the binary black hole merger GW150914**
B.P. Abbott et al.
Annalen der Physik **529** 1600209 (2017)
 85. **Facilitating follow-up of LIGO-Virgo events using rapid sky localization**
H.-Y. Chen & D.E. Holz
Astrophys. J. **840** 88 (2017)
 86. **Observational Selection Effects with Ground-based Gravitational Wave Detectors**
H.-Y. Chen, R. Essick, S. Vitale, & D.E. Holz
Astrophys. J. **835** 31 (2017)
 87. **A Search for Kilonovae in the Dark Energy Survey**
Z. Doctor, R. Kessler, H. Y. Chen, B. Farr, D. A. Finley, R. J. Foley,
D. A. Goldstein, D. E. Holz, et al.
Astrophys. J. **837** 1 (2017)
 88. **Are LIGO's Black Holes Made From Smaller Black Holes?**
M. Fishbach, D.E. Holz, & B. Farr
Astrophys. J. Lett. **840** L24 (2017)
 89. **GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence**
B. P. Abbott et al.
Phys. Rev. Lett. **119**, 141101 (2017)
 90. **Finding the One: Identifying the Host Galaxies of Gravitational-Wave Sources**
H.-Y. Chen & D.E. Holz
arXiv:1612.01471 (2017)

...publications continued next page...

PUBLICATIONS (click on titles to link to articles)

-
91. **GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral**
B. P. Abbott et al.
Phys. Rev. Lett. **119**, 161101 (2017)
 92. **Multi-messenger Observations of a Binary Neutron Star Merger**
B. P. Abbott et al.
Astrophys. J. Lett. **848**, L12 (2017)
 93. **Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A**
B. P. Abbott et al.
Astrophys. J. Lett. **848**, L13 (2017)
 94. **A gravitational-wave standard siren measurement of the Hubble constant**
B. P. Abbott et al.
Nature **551**, 85 (2017)
 95. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. I. Discovery of the Optical Counterpart Using the Dark Energy Camera**
M. Soares-Santos, D. E. Holz et al.
Astrophys. J. Lett. **848**, L16 (2017)
 96. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. II. UV, Optical, and Near-infrared Light Curves and Comparison to Kilonova Models**
P. S. Cowperthwaite et al.
Astrophys. J. Lett. **848**, L17 (2017)
 97. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. III. Optical and UV Spectra of a Blue Kilonova from Fast Polar Ejecta**
M. Nicholl et al.
Astrophys. J. Lett. **848**, L18 (2017)
 98. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. IV. Detection of Near-infrared Signatures of r-process Nucleosynthesis with Gemini-South**
R. Chornock et al.
Astrophys. J. Lett. **848**, L19 (2017)
 99. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. V. Rising X-Ray Emission from an Off-axis Jet**
R. Margutti et al.
Astrophys. J. Lett. **848**, L20 (2017)
 100. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. VI. Radio Constraints on a Relativistic Jet and Predictions for Late-time Emission from the Kilonova Ejecta**
K. D. Alexander et al.
Astrophys. J. Lett. **848**, L21 (2017)
 101. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. VII. Properties of the Host Galaxy and Constraints on the Merger Timescale**
P. K. Blanchard et al.
Astrophys. J. Lett. **848**, L22 (2017)
 102. **The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. VIII. A Comparison to Cosmological Short-duration Gamma-Ray Bursts**
W. Fong et al.
Astrophys. J. Lett. **848**, L23 (2017)

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103. **Where are LIGO's Big Black Holes?**
M. Fishbach & D.E. Holz
Astrophys. J. Lett. **851**, L25 (2017)
 104. **Statistical Gravitational Waveform Models: What to Simulate Next?**
Z. Doctor, B. Farr, D.E. Holz, & M. Pürrer
Phys. Rev. **D96**, 123011 (2017)
 105. **GW170608: Observation of a 19 Solar-mass Binary Black Hole Coalescence**
B. P. Abbott et al.
Astrophys. J. Lett. **851**, L35 (2017)
 106. **Distance measures in gravitational-wave astrophysics and cosmology**
H.-Y. Chen, D.E. Holz, J. Miller, M. Evans, S. Vitale, & J. Creighton
arXiv:1709.08079 (2017)
 107. **Using spin to understand the formation of LIGO's black holes**
B. Farr, D.E. Holz, & W. M. Farr
Astrophys. J. Lett. **854**, L9 (2018)
 108. **How Many Kilonovae Can Be Found in Past, Present, and Future Survey Data Sets?**
D. Scolnic et al.
Astrophys. J. Lett. **852**, L3 (2018)
 109. **Explaining LIGO's observations via isolated binary evolution with natal kicks**
D. Wysocki, D. Gerosa, R. O'Shaughnessy, K. Belczynski, W. Gladysz, E. Berti,
M. Kesden, & D.E. Holz
Phys. Rev. **D97**, 043014 (2018)
 110. **A Precise Distance to the Host Galaxy of the Binary Neutron Star Merger GW170817 Using Surface Brightness Fluctuations**
M. Cantiello et al.
Astrophys. J. Lett. **854**, L31 (2018)
 111. **Properties of the binary neutron star merger GW170817**
Abbott et al.
arXiv:1805.11579 (2018)
 112. **GW170817: Measurements of Neutron Star Radii and Equation of State**
Abbott et al.
arXiv:1805.11581 (2018)
 113. **The impact of inter-correlated initial binary parameters on double black hole/neutron star mergers**
J. Klencki, M. Moe, W. Gladysz, M. Chruslinska, D.E. Holz, K. Belczynski
arXiv:1808.07889 (2018)
 114. **The cosmological impact of future constraints on H_0 from gravitational-wave standard sirens**
E. Di Valentino, D.E. Holz, A. Melchiorri, F. Renzi
Phys. Rev. **D98** 083523 (2018)

...publications continued next page...

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115. **A 2 per cent Hubble constant measurement from standard sirens within 5 years**
H.-Y. Chen, M. Fishbach, & D.E. Holz
Nature **562**, 545 (2018)
116. **Limits on the number of spacetime dimensions from GW170817**
K. Pardo, M. Fishbach, D.E. Holz, & D.N. Spergel
JCAP **7**, 48 (2018)
117. **Does the Black Hole Merger Rate Evolve with Redshift?**
M. Fishbach, D.E. Holz, & W.M. Farr
Astrophys. J. Lett **863**, L41 (2018)
118. **A standard siren measurement of the Hubble constant from GW170817 without the electromagnetic counterpart**
M. Fishbach et al.
arXiv:1807.05667 (2018)

...only LIGO papers to which I have made significant contributions are included...
...click [here](#) for full list of publications...

PROCEEDINGS/MISCELLANEOUS

Coalescence of primal gravity waves to make cosmological mass without matter

D.E. Holz, W.A. Miller, M. Wakano, & J.A. Wheeler
 in *Directions in General Relativity, Volume 2*
 eds. B.L. Hu & T.A. Jacobson (Cambridge University Press: 1993)

Physics in knots

D.E. Holz, A. Kheyfets, W.A. Miller, & J.A. Wheeler
 in *Physical Origins of Time Asymmetry*
 eds. J.J. Halliwell, J. Pérez-Mercader, & W.H. Zurek (Cambridge University Press: 1994)

Shedding light on dark matter

D.E. Holz
Nature **400**, 819 (1999)

SNAP and multiply-imaged supernovae

D.E. Holz
 invited contribution, *SNAP yellow book* (2001)

Gravitational waves from core-collapse

C.L. Fryer, M.S. Warren, D.E. Holz, S.A. Hughes, & R. Dupuis
 in *Gravitational-Wave Detection*
 SPIE, vol. 4856, eds. P. Saulson & M. Cruise (2002)

Cosmology with coalescing massive black holes

S.A. Hughes & D.E. Holz
Class. Quant. Grav. **20**, S65 (2003)

Stellar collapse and gravitational waves

C.L. Fryer, D.E. Holz, S.A. Hughes, & M.S. Warren
 in *Stellar Collapse* (Astrophysics and Space Sciences)
 ed. C.L. Fryer (Kluwer: 2004)

An accelerated history of the Universe

D.E. Holz
 in *Seventh International Conference on Particles and Nuclei*
 AIP conference proceedings, **842**, 741 (2006)

Dark Cosmos: In Search of Our Universe's Missing Mass and Energy

D.E. Holz
 Book review in *Physics Today*, **60**, 62 (2007)

Running after $w(z)$: Some stumbling blocks

D. Sarkar et al.
Nuc. Phys. B **194**, 307 (2009)

Astro2010 Decadal Survey Whitepaper: Coordinated Science in the Gravitational and Electromagnetic Skies

Bloom, S., Holz, D.E., Hughes, S.A., Menou, K., et al. (2010)

Astro2010 Decadal Survey Whitepaper: Precision Cosmology with Gravitational Waves

Hogan, C.J., Schutz, B.F., Cutler, C.J., Hughes, S.A., & Holz, D.E. (2010)

The Gravitational Universe

The eLISA Consortium; arXiv:1305.5720 (2013)

Distance Probes of Dark Energy (Snowmass report)

Kim, A., Padmanabhan, N., et al. *Astropart. Phys.* (2014); arXiv:1309.5382

Conveying gravity: Communicating the Discovery of Gravitational Waves

Key, J.S., Hendry, M., & Holz, D.E.; APS News "The Back Page" (August/September 2016)

INVITED TALKS (very abbreviated list)

The most massive objects in the Universe

Astrophysics Colloquium, MIT
Cambridge, MA; April, 2010

Cosmology from gravitational-wave standard sirens

ITC Colloquium, Harvard
Cambridge, MA; April, 2011

Listening to the Universe with gravitational waves

Heinz R. Pagels Memorial Public Lecture, Aspen Center for Physics
Aspen, CO; June, 2011

Cosmology with gravitational waves

Astronomy Colloquium, Yale
New Haven, CT; October, 2011

Cosmology with gravitational-waves

Physics Colloquium, Stanford
Palo Alto, CA; December, 2011

Measuring the Hubble constant with gravitational waves

Plenary talk, Gravitational Physics & Astrophysics conference (GWPAW)
Hannover, Germany; June, 2012

Multi-messenger astronomy panel convener

“Science from the first gravitational-wave detections” workshop
South Padre Island, TX; May, 2013

Gravitational waves

Course lecturer, Cosmology on the Beach
Los Cabos, Mexico; January, 2014

Gravitational wave astrophysics with LIGO

ITC Colloquium, Harvard University
Cambridge, MA; September, 2014

Astrophysical sources of gravitational waves and electromagnetic counterparts

Invited talk in special session “The Quest for Gravitational Waves, 100 years After Einstein”
American Astronomical Society meeting; Seattle, WA; January, 2015

Astrophysical implications of GW150914

presentation of GW150914 companion paper on behalf of the LVC
APS April meeting; Salt Lake City, UT; April, 2016

Observation of Gravitational Waves from a Binary Black Hole Merger

Physics Colloquia at FNAL, LBL/Berkeley, Madison, Stanford, UCLA
Winter/Spring 2016

How does the Universe make LIGO’s black holes?

KITP Blackboard Talk; Santa Barbara, CA; August 2016

Gravitational waves, black holes, and LIGO

National Academy of Sciences/Kavli Frontiers of Science; Irvine, CA; February 2017

Hearing and Seeing GW170817

IAS/Princeton joint colloquium; Princeton, NJ; December 2017

GW170817: Hearing and Seeing a Binary Neutron Star Merger

UPenn Rittenhouse Lecture; Philadelphia, PA; December 2017

Some recent results in gravitational-wave astrophysics

Harvard Sackler Conference: Gravitational Wave Astrophysics; Boston, MA; May 2018

Hearing and Seeing a Binary Neutron Star Merger

Stanford Physics Colloquium; Stanford, CA; May 2018