

## Peter Kalmus

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### Education

2008 Ph.D. Physics Columbia University  
2008 M.Phil. Physics Columbia University  
2006 M.S. Physics Columbia University  
1997 B.A. Physics Harvard (Honors)

### Honors and Awards

2018 Best Sustainable Movies of 2018 from 350 Bay Area, for “Being the Change: a New Kind of Climate Documentary”  
2018 NASA Early Career Public Achievement Medal  
2018 Transition “Walk the Talk” Award  
2018 Named to [Grist 50](#) annual list as one of ten “Visionaries”  
2018 IPPY “Outstanding Book of the Year” Award for *Being the Change: Live Well and Spark a Climate Revolution*  
2017 Jet Propulsion Laboratory Voyager Award  
2017 NASA Team Award  
2017 Nautilus Book Award for *Being the Change: Live Well and Spark a Climate Revolution*  
2017 Foreword Indies Book Award for *Being the Change: Live Well and Spark a Climate Revolution*  
2008 Physical Review Letters “Editors’ Suggestion” for my paper, “[Search for Gravitational-Wave Bursts from Soft Gamma Repeaters](#)”

### Primary Research Interests

Low cloud physics and feedbacks  
Improving satellite climate data sets (data fusion and uncertainty quantification)  
Tornadogenesis  
Ecological forecasting

### Professional Experience

2016 - *Data Scientist*, Jet Propulsion Laboratory, Science Data Modeling and Computing Group  
2018 - *Associate Project Scientist*, University of California Joint Institute for Regional Earth System Science and Engineering (JIFRESSE)

- 2014-18 *Assistant Researcher*, University of California Joint Institute for Regional Earth System Science and Engineering (JIFRESSE)
- 2013-14 *Postdoctoral Scholar*, California Institute of Technology and Jet Propulsion Laboratory, Climate Physics
- 2012 *Lecturer in Physics*, California Institute of Technology, Department of Physics, Math, and Astronomy
- 2008-12 *Postdoctoral Scholar*, California Institute of Technology, Department of Physics, Math, and Astronomy
- 2003-04 *Software Engineer*, Liquidnet, New York City
- 2001-03 *Senior Software Developer*. Random Walk Computing, New York City
- 2000-01 *Software Developer*. Random Walk Computing, New York City
- 1998-00 *Teacher in Physics, Math, and Astronomy*. Tabor Academy, Marion, Massachusetts

## Professional Affiliations

American Meteorological Society  
 American Geophysical Union

## Research Grants

- 2019-2022 *Identifying coral refugia from observationally weighted climate model ensembles*, NASA ROSES A.8 Sustaining Living Systems in a Time of Climate Variability and Change. Principal Investigator: P. Kalmus (Jet Propulsion Laboratory). Co-Investigators: M. Gierach and A. Braverman (Jet Propulsion Laboratory), E. Kang (University of Cincinnati).
- 2018-2021 *Trajectory model-enhanced NUCAPS soundings for transition into AWIPS-II and convective initiation forecast skill assessment*, NOAA Joint Polar Satellite System Proving Ground and Risk Reduction Program. Principal Investigator: B. Kahn (Jet Propulsion Laboratory). Co-Investigators: P. Kalmus (Jet Propulsion Laboratory), E. Berndt (Marshall Space Flight Center).
- 2018-2019 *Planetary Boundary Layer Transitions in the Southeast Pacific*, proposal to the NASA Program Executive. Principal Investigator: M. Lebsock (Jet Propulsion Laboratory). Co-Investigator: P. Kalmus (Jet Propulsion Laboratory).

## Books and Book Chapters

Kalmus, Peter (2018). 'Climate change: humanity at a crossroads,' in Godfrey, K. (ed.) *A Transcendent Decade: Towards a New Enlightenment*. Spain: BBVA Open Mind.

Kalmus, Peter (2017). *Being the Change: Live Well and Spark a Climate Revolution*, New Society Publishers, 369 pp.

## Peer-reviewed Scientific Articles

Cited articles = 108, citations=6893, H-index = 46 ([ResearcherID](#))

Cited articles = 94, citations=9071, H-index = 47 ([Google Scholar](#))

Note: The LIGO Scientific Collaboration and its partners (here, “LIGO Collaboration”) have strict and complex authorship rules due to the highly collaborative nature of producing gravitational wave data. Being the lead author on a full collaboration paper (which have on the order of 1,000 co-authors with LSC members’ names alphabetized) is a major achievement. The lead designs and carries out the scientific analysis and defends the paper before the collaboration.

\*\* Indicates full collaboration papers on which I was lead author (there are three).

\* Indicates full collaboration papers on which I was co-lead author (there are two).

Kalmus, P., Kahn, B. H., Freeman, S. W., van den Heever, S. C. (2018). Trajectory-enhanced AIRS observations of environmental factors leading to tornadogenesis. *Monthly Weather Review*, in revisions.

Irion, F. W., Kahn, B. H., Schreier, M. M., Fetzer, E. J., Fishbein, E., Fu, D., Kalmus, P., Wilson, R. C., Wong, S., Yue, Q. (2018). Single-footprint retrievals of temperature, water vapor and cloud properties from AIRS. *Atmospheric Measurement Techniques*, 11(2), 971-995.  
[doi:10.5194/amt-11-971-2018](https://doi.org/10.5194/amt-11-971-2018)

Kalmus, P., & Lebsock, M. (2017). Correcting biased Evaporation in CloudSat warm rain. *IEEE Transactions on Geoscience and Remote Sensing*, 55(11), 6207-6217.  
[doi:10.1109/TGRS.2017.2722469](https://doi.org/10.1109/TGRS.2017.2722469)

Millan, L., Lebsock, M., Fishbein, E., Kalmus, P., & Teixeira, J. (2016). Quantifying marine boundary layer water vapor beneath low clouds with near-infrared and microwave imagery. *Journal of Applied Meteorology and Climatology*, 55(1), 213-225. [doi:10.1175/JAMC-D-15-0143.1](https://doi.org/10.1175/JAMC-D-15-0143.1)

\*LIGO Collaboration: Abbott, B. P. et al. (2016). First targeted search for gravitational-wave bursts from core-collapse supernovae in data of first-generation laser interferometer detectors. *Physical Review D*, 94(10). [doi:10.1103/PhysRevD.94.102001](https://doi.org/10.1103/PhysRevD.94.102001)

Lebsock, M. D., Suzuki, K., Millan, L. F., & Kalmus, P. M. (2015). The feasibility of water vapor sounding of the cloudy boundary layer using a differential absorption radar technique. *Atmospheric Measurement Techniques*, 8(9), 3631-3645. [doi:10.5194/amt-8-3631-2015](https://doi.org/10.5194/amt-8-3631-2015)

Kalmus, P., Wong, S., & Teixeira, J. (2015). The Pacific subtropical cloud transition: A MAGIC assessment of AIRS and ECMWF thermodynamic structure. *IEEE Geoscience and Remote Sensing Letters*, 12(7), 1586-1590. [doi:10.1109/LGRS.2015.2413771](https://doi.org/10.1109/LGRS.2015.2413771)

LIGO Collaboration: Aasi, J., et al. (2015). Characterization of the LIGO detectors during their sixth science run. *Classical and Quantum Gravity*, 32(11). [doi:10.1088/0264-9381/32/11/115012](https://doi.org/10.1088/0264-9381/32/11/115012)

LIGO Collaboration: Aasi, J., et al. (2015). Searching for stochastic gravitational waves using data from the two colocated LIGO Hanford detectors. *Physical Review D*, 91(2). [doi:10.1103/PhysRevD.91.022003](https://doi.org/10.1103/PhysRevD.91.022003)

Was, M., Kalmus, P., Leong, J. R., Adams, T., Leroy, N., Macleod, D. M., . . . Robinet, F. (2014). A fixed false alarm probability figure of merit for gravitational wave detectors. *Classical and Quantum Gravity*, 31(8). [doi:10.1088/0264-9381/31/8/085004](https://doi.org/10.1088/0264-9381/31/8/085004)

Kalmus, P., Lebsock, M., & Teixeira, J. (2014). Observational boundary layer energy and water budgets of the stratocumulus-to-cumulus transition. *Journal of Climate*, 27(24), 9155-9170. [doi:10.1175/JCLI-D-14-00242.1](https://doi.org/10.1175/JCLI-D-14-00242.1)

LIGO Collaboration: Aasi, J., et al. (2014). Methods and results of a search for gravitational waves associated with gamma-ray bursts using the GEO 600, LIGO, and Virgo detectors. *Physical Review D*, 89(12). [doi:10.1103/PhysRevD.89.122004](https://doi.org/10.1103/PhysRevD.89.122004)

LIGO Collaboration: Aasi, J., et al. (2014). Search for gravitational waves associated with gamma-ray bursts detected by the Interplanetary Network. *Physical Review Letters*, 113(1). [doi:10.1103/PhysRevLett.113.011102](https://doi.org/10.1103/PhysRevLett.113.011102)

LIGO Collaboration: Aasi, J., et al. (2014). Search for gravitational wave ringdowns from perturbed intermediate mass black holes in LIGO-Virgo data from 2005-2010. *Physical Review D*, 89(10). [doi:10.1103/PhysRevD.89.102006](https://doi.org/10.1103/PhysRevD.89.102006)

LIGO Collaboration: Aasi, J., et al. (2014). The NINJA-2 project: detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations. *Classical and Quantum Gravity*, 31(11). [doi:10.1088/0264-9381/31/11/115004](https://doi.org/10.1088/0264-9381/31/11/115004)

LIGO Collaboration: Aasi, J., et al. (2014). Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run. *Physical Review D*, 89(12). [doi:10.1103/PhysRevD.89.122003](https://doi.org/10.1103/PhysRevD.89.122003)

LIGO Collaboration: Aasi, J., et al. (2014). Implementation of an F-statistic all-sky search for continuous gravitational waves in Virgo VSR1 data. *Classical and Quantum Gravity*, 31(16). [doi:10.1088/0264-9381/31/16/165014](https://doi.org/10.1088/0264-9381/31/16/165014)

LIGO Collaboration: Aasi, J., et al. (2014). First all-sky search for continuous gravitational waves from unknown sources in binary systems. *Physical Review D*, 90(6). [doi:10.1103/PhysRevD.90.062010](https://doi.org/10.1103/PhysRevD.90.062010)

LIGO Collaboration: Aasi, J., et al. (2014). Improved upper limits on the stochastic gravitational-wave background from 2009-2010 LIGO and Virgo data. *Physical Review Letters*, 113(23). [doi:10.1103/PhysRevLett.113.231101](https://doi.org/10.1103/PhysRevLett.113.231101)

LIGO Collaboration: Aasi, J., et al. (2014). First searches for optical counterparts to gravitational-wave candidate events. *Astrophysical Journal Supplement Series*, 211(1). [doi:10.1088/0067-0049/211/1/7](https://doi.org/10.1088/0067-0049/211/1/7)

LIGO Collaboration: Aasi, J., et al. (2014). Constraints on cosmic strings from the LIGO-Virgo gravitational-wave detectors. *Physical Review Letters*, 112(13). [doi:10.1103/PhysRevLett.112.131101](https://doi.org/10.1103/PhysRevLett.112.131101)

LIGO Collaboration: Aasi, J., et al. (2014). Gravitational waves from known pulsars: results from the initial detector era. *Astrophysical Journal*, 785(2). [doi:10.1088/0004-637X/785/2/119](https://doi.org/10.1088/0004-637X/785/2/119)

LIGO Collaboration: Aasi, J., et al. (2014). Application of a Hough search for continuous gravitational waves on data from the fifth LIGO science run. *Classical and Quantum Gravity*, 31(8). [doi:10.1088/0264-9381/31/8/085014](https://doi.org/10.1088/0264-9381/31/8/085014)

LIGO Collaboration: Aartsen, M. G., et al. (2014). Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube. *Physical Review D*, 90(10). [doi:10.1103/PhysRevD.90.102002](https://doi.org/10.1103/PhysRevD.90.102002)

Andersson, N., Baker, J., Belczynski, K., Bernuzzi, S., Berti, E., . . . Kalmus, P., . . . Whitcomb, S. (2013). The transient gravitational-wave sky. *Classical and Quantum Gravity*, 30(19). [doi:10.1088/0264-9381/30/19/193002](https://doi.org/10.1088/0264-9381/30/19/193002)

LIGO Collaboration: Adrian-Martinez, S., et al. (2013). A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007. *Journal of Cosmology and Astroparticle Physics*, (6). [doi:10.1088/1475-7516/2013/06/008](https://doi.org/10.1088/1475-7516/2013/06/008)

LIGO Collaboration: Aasi, J., et al. (2013). Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light. *Nature Photonics*, 7(8), 613-619. [doi:10.1038/NPHOTON.2013.177](https://doi.org/10.1038/NPHOTON.2013.177)

LIGO Collaboration: Aasi, J., et al. (2013). Search for gravitational waves from binary black hole inspiral, merger, and ringdown in LIGO-Virgo data from 2009-2010. *Physical Review D*, 87(2). [doi:10.1103/PhysRevD.87.022002](https://doi.org/10.1103/PhysRevD.87.022002)

LIGO Collaboration: Aasi, J., et al. (2013). Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data. *Physical Review D*, 87(4). [doi:10.1103/PhysRevD.87.042001](https://doi.org/10.1103/PhysRevD.87.042001)

LIGO Collaboration: Aasi, J., et al. (2013). Parameter estimation for compact binary coalescence signals with the first generation gravitational-wave detector network. *Physical Review D*, 88(6). [doi:10.1103/PhysRevD.88.062001](https://doi.org/10.1103/PhysRevD.88.062001)

LIGO Collaboration: Aasi, J., et al. (2013). Directed search for continuous gravitational waves from the Galactic center. *Physical Review D*, 88(10). [doi:10.1103/PhysRevD.88.102002](https://doi.org/10.1103/PhysRevD.88.102002)

LIGO Collaboration: Aasi, J., et al. (2013). Search for long-lived gravitational-wave transients coincident with long gamma-ray bursts. *Physical Review D*, 88(12). [doi:10.1103/PhysRevD.88.122004](https://doi.org/10.1103/PhysRevD.88.122004)

Ott, C. D., Abdikamalov, E., O'Connor, E., Reisswig, C., Haas, R., Kalmus, P., . . . Schnetter, E. (2012). Correlated gravitational wave and neutrino signals from general-relativistic rapidly rotating iron core collapse. *Physical Review D*, 86(2). [doi:10.1103/PhysRevD.86.024026](https://doi.org/10.1103/PhysRevD.86.024026)

Logue, J., Ott, C. D., Heng, I. S., Kalmus, P., & Scargill, J. H. C. (2012). Inferring core-collapse supernova physics with gravitational waves. *Physical Review D*, 86(4). [doi:10.1103/PhysRevD.86.044023](https://doi.org/10.1103/PhysRevD.86.044023)

LIGO Collaboration: Evans, P. A. et al. (2012). Swift follow-up observations of candidate gravitational-wave transient events. *Astrophysical Journal Supplement Series*, 203(2). [doi:10.1088/0067-0049/203/2/28](https://doi.org/10.1088/0067-0049/203/2/28)

\*LIGO Collaboration: Abadie, J., et al. (2012). Implications for the origin of GRB 051103 from LIGO observations. *Astrophysical Journal*, 755(1). [doi:10.1088/0004-637X/755/1/2](https://doi.org/10.1088/0004-637X/755/1/2)

LIGO Collaboration: Abadie, J., et al. (2012). Search for gravitational waves associated with gamma-ray bursts during LIGO science run 6 and Virgo science runs 2 and 3. *Astrophysical Journal*, 760(1). [doi:10.1088/0004-637X/760/1/12](https://doi.org/10.1088/0004-637X/760/1/12)

LIGO Collaboration: Abadie, J., et al. (2012). All-sky search for periodic gravitational waves in the full S5 LIGO data. *Physical Review D*, 85(2). [doi:10.1103/PhysRevD.85.022001](https://doi.org/10.1103/PhysRevD.85.022001)

LIGO Collaboration: Abadie, J., et al. (2012). Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts. *Astronomy & Astrophysics*, 539. [doi:10.1051/0004-6361/201118219](https://doi.org/10.1051/0004-6361/201118219)

LIGO Collaboration: Abadie, J., et al. (2012). Search for gravitational waves from low mass compact binary coalescence in LIGO's sixth science run and Virgo's science runs 2 and 3. *Physical Review D*, 85(8). [doi:10.1103/PhysRevD.85.082002](https://doi.org/10.1103/PhysRevD.85.082002)

LIGO Collaboration: Abadie, J., et al. (2012). First low-latency LIGO plus Virgo search for binary inspirals and their electromagnetic counterparts. *Astronomy & Astrophysics*, 541. [doi:10.1051/0004-6361/201218860](https://doi.org/10.1051/0004-6361/201218860)

LIGO Collaboration: Abadie, J., et al. (2012). Search for gravitational waves from intermediate mass binary black holes. *Physical Review D*, 85(10). [doi:10.1103/PhysRevD.85.102004](https://doi.org/10.1103/PhysRevD.85.102004)

LIGO Collaboration: Abadie, J., et al. (2012). Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600-1000 Hz. *Physical Review D*, 85(12). [doi:10.1103/PhysRevD.85.122001](https://doi.org/10.1103/PhysRevD.85.122001)

LIGO Collaboration: Abadie, J., et al. (2012). All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run. *Physical Review D*, 85(12). [doi:10.1103/PhysRevD.85.122007](https://doi.org/10.1103/PhysRevD.85.122007)

LIGO Collaboration: Aasi, J., et al. (2012). The characterization of Virgo data and its impact on gravitational-wave searches. *Classical and Quantum Gravity*, 29(15). [doi:10.1088/0264-9381/29/15/155002](https://doi.org/10.1088/0264-9381/29/15/155002)

LIGO Collaboration: Abadie, J., et al. (2011). Search for gravitational waves associated with the August 2006 timing glitch of the Vela Pulsar. *Physical Review D*, 83(4). [doi:10.1103/PhysRevD.83.042001](https://doi.org/10.1103/PhysRevD.83.042001)

LIGO Collaboration: Abadie, J., et al. (2011). Search for gravitational waves from binary black hole inspiral, merger, and ringdown. *Physical Review D*, 83(12). [doi:10.1103/PhysRevD.83.122005](https://doi.org/10.1103/PhysRevD.83.122005)

LIGO Collaboration: Abadie, J., et al. (2011). Directional limits on persistent gravitational waves using LIGO S5 science data. *Physical Review Letters*, 107(27). [doi:10.1103/PhysRevLett.107.271102](https://doi.org/10.1103/PhysRevLett.107.271102)

\*\*LIGO Collaboration: Abadie, J., et al. (2011). Search for gravitational wave bursts from six magnetars. *Astrophysical Journal Letters*, 734(2). [doi:10.1088/2041-8205/734/2/L35](https://doi.org/10.1088/2041-8205/734/2/L35)

LIGO Collaboration: Abadie, J., et al. (2011). Beating the spin-down limit on gravitational wave emission from the Vela Pulsar. *Astrophysical Journal*, 737(2). [doi:10.1088/0004-637X/737/2/93](https://doi.org/10.1088/0004-637X/737/2/93)

LIGO Collaboration: Abadie, J., et al. (2011). A gravitational wave observatory operating beyond the quantum shot-noise limit. *Nature Physics*, 7(12), 962-965. [doi:10.1038/NPHYS2083](https://doi.org/10.1038/NPHYS2083)

Sutton, P. J., Jones, G., Chatterji, S., Kalmus, P., Leonor, I., Poprocki, S., . . . Was, M. (2010). X-Pipeline: an analysis package for autonomous gravitational-wave burst searches. *New Journal of Physics*, 12. [doi:10.1088/1367-2630/12/5/053034](https://doi.org/10.1088/1367-2630/12/5/053034)

Goetz, E., Savage, R. L., Jr., Garofoli, J., Gonzalez, G., Hirose, E., Kalmus, P., . . . Sung, M. (2010). Accurate calibration of test mass displacement in the LIGO interferometers. *Classical and Quantum Gravity*, 27(8). [doi:10.1088/0264-9381/27/8/084024](https://doi.org/10.1088/0264-9381/27/8/084024)

LIGO Collaboration: Abbott, B. P., et al. (2010). Searches for gravitational waves from known pulsars with Science Run 5 LIGO data. *Astrophysical Journal*, 713(1), 671-685. [doi:10.1088/0004-637X/713/1/671](https://doi.org/10.1088/0004-637X/713/1/671)

LIGO Collaboration: Abbott, B. P., et al. (2010). Search for gravitational-wave bursts associated with gamma-ray bursts using data from LIGO Science Run 5 and Virgo Science Run 1. *Astrophysical Journal*, 715(2), 1438-1452. [doi:10.1088/0004-637X/715/2/1438](https://doi.org/10.1088/0004-637X/715/2/1438)

LIGO Collaboration: Abadie, J., et al. (2010). All-sky search for gravitational-wave bursts in the first joint LIGO-GEO-Virgo run. *Physical Review D*, 81(10). [doi:10.1103/PhysRevD.81.102001](https://doi.org/10.1103/PhysRevD.81.102001)

LIGO Collaboration: Abadie, J., et al. (2010). Search for gravitational-wave inspiral signals associated with short gamma-ray bursts during LIGO's fifth and Virgo's first science run. *Astrophysical Journal*, 715(2), 1453-1461. [doi:10.1088/0004-637X/715/2/1453](https://doi.org/10.1088/0004-637X/715/2/1453)

LIGO Collaboration: Abadie, J., et al. (2010). First search for gravitational waves from the youngest known neutron star. *Astrophysical Journal*, 722(2), 1504-1513. [doi:10.1088/0004-637X/722/2/1504](https://doi.org/10.1088/0004-637X/722/2/1504)

LIGO Collaboration: Abadie, J., et al. (2010). Calibration of the LIGO gravitational wave detectors in the fifth science run. *Nuclear Instruments & Methods in Physics Research Section A-Accelerators Spectrometers Detectors and Associated Equipment*, 624(1), 223-240. [doi:10.1016/j.nima.2010.07.089](https://doi.org/10.1016/j.nima.2010.07.089)

LIGO Collaboration: Abadie, J., et al. (2010). Predictions for the rates of compact binary coalescences observable by ground-based gravitational-wave detectors. *Classical and Quantum Gravity*, 27(17). [doi:10.1088/0264-9381/27/17/173001](https://doi.org/10.1088/0264-9381/27/17/173001)

LIGO Collaboration: Abadie, J., et al. (2010). Search for gravitational waves from compact binary coalescence in LIGO and Virgo data from S5 and VSR1. *Physical Review D*, 82(10). [doi:10.1103/PhysRevD.82.102001](https://doi.org/10.1103/PhysRevD.82.102001)

Kalmus, P., Cannon, K. C., Marka, S., & Owen, B. J. (2009). Stacking gravitational wave signals from soft gamma repeater bursts. *Physical Review D*, 80(4). [doi:10.1103/PhysRevD.80.042001](https://doi.org/10.1103/PhysRevD.80.042001)

Goetz, E., Kalmus, P., Erickson, S., Savage, R. L., Jr., Gonzalez, G., Kawabe, K., . . . Willems, P. (2009). Precise calibration of LIGO test mass actuators using photon radiation pressure. *Classical and Quantum Gravity*, 26(24). [doi:10.1088/0264-9381/26/24/245011](https://doi.org/10.1088/0264-9381/26/24/245011)



Aso, Y., Goetz, E., Kalmus, P., Matone, L., Marka, S., Myers, J., . . . Smith, N. (2009). Accurate measurement of the time delay in the response of the LIGO gravitational wave detectors. *Classical and Quantum Gravity*, 26(5). [doi:10.1088/0264-9381/26/5/055010](https://doi.org/10.1088/0264-9381/26/5/055010)

LIGO Collaboration: Abbott, B. P., et al. (2009). Search for gravitational waves from low mass binary coalescences in the first year of LIGO's S5 data. *Physical Review D*, 79(12). [doi:10.1103/PhysRevD.79.122001](https://doi.org/10.1103/PhysRevD.79.122001)

LIGO Collaboration: Abbott, B. P., et al. (2009). LIGO: The Laser Interferometer Gravitational-Wave Observatory. *Reports on Progress in Physics*, 72(7). [doi:10.1088/0034-4885/72/7/076901](https://doi.org/10.1088/0034-4885/72/7/076901)

LIGO Collaboration: Abbott, B. P., et al. (2009). Search for gravitational waves from low mass compact binary coalescence in 186 days of LIGO's fifth science run. *Physical Review D*, 80(4). [doi:10.1103/PhysRevD.80.047101](https://doi.org/10.1103/PhysRevD.80.047101)

LIGO Collaboration: Abbott, B. P., et al. (2009). Einstein@Home search for periodic gravitational waves in early S5 LIGO data. *Physical Review D*, 80(4). [doi:10.1103/PhysRevD.80.042003](https://doi.org/10.1103/PhysRevD.80.042003)

\*\*LIGO Collaboration: Abbott, B. P., et al. (2009). Stacked search for gravitational waves from the 2006 SGR 1900+14 storm. *Astrophysical Journal Letters*, 701(2), L68-L74. [doi:10.1088/0004-637X/701/2/L68](https://doi.org/10.1088/0004-637X/701/2/L68)

LIGO Collaboration: Abbott, B. P., et al. (2009). Search for gravitational wave ringdowns from perturbed black holes in LIGO S4 data. *Physical Review D*, 80(6). [doi:10.1103/PhysRevD.80.062001](https://doi.org/10.1103/PhysRevD.80.062001)

LIGO Collaboration: Abbott, B. P., et al. (2009). First LIGO search for gravitational wave bursts from cosmic (super)strings. *Physical Review D*, 80(6). [doi:10.1103/PhysRevD.80.062002](https://doi.org/10.1103/PhysRevD.80.062002)

LIGO Collaboration: Abbott, B. P., et al. (2009). Search for high frequency gravitational-wave bursts in the first calendar year of LIGO's fifth science run. *Physical Review D*, 80(10). [doi:10.1103/PhysRevD.80.102002](https://doi.org/10.1103/PhysRevD.80.102002)

LIGO Collaboration: Abbott, B. P., et al. (2009). Search for gravitational-wave bursts in the first year of the fifth LIGO science run. *Physical Review D*, 80(10). [doi:10.1103/PhysRevD.80.102001](https://doi.org/10.1103/PhysRevD.80.102001)

LIGO Collaboration: Abbott, B. P., et al. (2009). All-Sky LIGO Search for Periodic Gravitational Waves in the Early Fifth-Science-Run Data. *Physical Review Letters*, 102(11). [doi:10.1103/PhysRevLett.102.111102](https://doi.org/10.1103/PhysRevLett.102.111102)

LIGO Collaboration: Abbott, B. P., et al. (2009). An upper limit on the stochastic gravitational-wave background of cosmological origin. *Nature*, 460(7258), 990-994. [doi:10.1038/nature08278](https://doi.org/10.1038/nature08278)

LIGO Collaboration: Abbott, B. P., et al. (2009). Observation of a kilogram-scale oscillator near its quantum ground state. *New Journal of Physics*, 11. [doi:10.1088/1367-2630/11/7/073032](https://doi.org/10.1088/1367-2630/11/7/073032)

LIGO Collaboration: Abbott, B. P., et al. (2009). Beating the spin-down limit on gravitational wave emission from the Crab Pulsar (vol 683, pg L45, 2008). *Astrophysical Journal Letters*, 706(1), L203-L204. [doi:10.1088/0004-637X/706/1/L203](https://doi.org/10.1088/0004-637X/706/1/L203)

LIGO Collaboration: Abbott, B. P., et al. (2009). Einstein@Home search for periodic gravitational waves in LIGO S4 data. *Physical Review D*, 79(2). [doi:10.1103/PhysRevD.79.022001](https://doi.org/10.1103/PhysRevD.79.022001)

LIGO Collaboration: Abbott, B. P., et al. (2009). All-sky search for periodic gravitational waves in LIGO S4 data (vol 77, 022001, 2008). *Physical Review D*, 80(12). [doi:10.1103/PhysRevD.80.129904](https://doi.org/10.1103/PhysRevD.80.129904)

LIGO Collaboration: Abbott, B. P., et al. (2008). A joint search for gravitational wave bursts with AURIGA and LIGO. *Classical and Quantum Gravity*, 25(9). [doi:10.1088/0264-9381/25/9/095004](https://doi.org/10.1088/0264-9381/25/9/095004)

LIGO Collaboration: Abbott, B. P., et al. (2008). Astrophysically triggered searches for gravitational waves: status and prospects. *Classical and Quantum Gravity*, 25(11). [doi:10.1088/0264-9381/25/11/114051](https://doi.org/10.1088/0264-9381/25/11/114051)

LIGO Collaboration: Abbott, B. P., et al. (2008). Beating the spin-down limit on gravitational wave emission from the Crab Pulsar. *Astrophysical Journal Letters*, 683(1), L45-L49. [doi:10.1086/591526](https://doi.org/10.1086/591526)

\*\*LIGO Collaboration: Abbott, B. P., et al. (2008). Search for Gravitational-Wave Bursts from Soft Gamma Repeaters. *Physical Review Letters*, 101(21). [doi:10.1103/PhysRevLett.101.211102](https://doi.org/10.1103/PhysRevLett.101.211102)

LIGO Collaboration: Abbott, B. P., et al. (2008). First joint search for gravitational-wave bursts in LIGO and GEO 600 data. *Classical and Quantum Gravity*, 25(24). [doi:10.1088/0264-9381/25/24/245008](https://doi.org/10.1088/0264-9381/25/24/245008)

LIGO Collaboration: Abbott, B. P., et al. (2008). All-sky search for periodic gravitational waves in LIGO S4 data. *Physical Review D*, 77(2). [doi:10.1103/PhysRevD.77.022001](https://doi.org/10.1103/PhysRevD.77.022001)

LIGO Collaboration: Abbott, B. P., et al. (2008). First cross-correlation analysis of interferometric and resonant-bar gravitational-wave data for stochastic backgrounds (vol 76, art no 022001, 2007). *Physical Review D*, 77(6). [doi:10.1103/PhysRevD.77.069904](https://doi.org/10.1103/PhysRevD.77.069904)

LIGO Collaboration: Abbott, B. P., et al. (2008). Search for gravitational waves from binary inspirals in S3 and S4 LIGO data. *Physical Review D*, 77(6). [doi:10.1103/PhysRevD.77.062002](https://doi.org/10.1103/PhysRevD.77.062002)

LIGO Collaboration: Abbott, B. P., et al. (2008). Search for gravitational waves associated with 39 gamma-ray bursts using data from the second, third, and fourth LIGO runs. *Physical Review D*, 77(6). [doi:10.1103/PhysRevD.77.062004](https://doi.org/10.1103/PhysRevD.77.062004)

LIGO Collaboration: Abbott, B. P., et al. (2008). Implications for the origin of GRB 070201 from LIGO observations. *Astrophysical Journal*, 681(2), 1419-1430. [doi:10.1086/587954](https://doi.org/10.1086/587954)

LIGO Collaboration: Abbott, B. P., et al. (2008). Search of S3 LIGO data for gravitational wave signals from spinning black hole and neutron star binary inspirals. *Physical Review D*, 78(4). [doi:10.1103/PhysRevD.78.042002](https://doi.org/10.1103/PhysRevD.78.042002)

Matone, L., Raffai, P., Marka, S., Grossman, R., Kalmus, P., Marka, Z., . . . Sannibale, V. (2007). Benefits of artificially generated gravity gradients for interferometric gravitational-wave detectors. *Classical and Quantum Gravity*, 24(9), 2217-2229. [doi:10.1088/0264-9381/24/9/005](https://doi.org/10.1088/0264-9381/24/9/005)

Kalmus, P., Khan, R., Matone, L., & Marka, S. (2007). Search method for unmodeled transient gravitational waves associated with SGR flares. *Classical and Quantum Gravity*, 24(19), S659-S669. [doi:10.1088/0264-9381/24/19/S28](https://doi.org/10.1088/0264-9381/24/19/S28)

LIGO Collaboration: Abbott, B. P., et al. (2007). Searching for a stochastic background of gravitational waves with the laser interferometer gravitational-wave observatory. *Astrophysical Journal*, 659(2), 918-930. [doi:10.1086/511329](https://doi.org/10.1086/511329)

LIGO Collaboration: Abbott, B. P., et al. (2007). First cross-correlation analysis of interferometric and resonant-bar gravitational-wave data for stochastic backgrounds. *Physical Review D*, 76(2). [doi:10.1103/PhysRevD.76.022001](https://doi.org/10.1103/PhysRevD.76.022001)

LIGO Collaboration: Abbott, B. P., et al. (2007). Upper limits on gravitational wave emission from 78 radio pulsars. *Physical Review D*, 76(4). [doi:10.1103/PhysRevD.76.042001](https://doi.org/10.1103/PhysRevD.76.042001)

LIGO Collaboration: Abbott, B. P., et al. (2007). Searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: Results from the second LIGO science run. *Physical Review D*, 76(8). [doi:10.1103/PhysRevD.76.082001](https://doi.org/10.1103/PhysRevD.76.082001)

LIGO Collaboration: Abbott, B. P., et al. (2007). Upper limit map of a background of gravitational waves. *Physical Review D*, 76(8). [doi:10.1103/PhysRevD.76.082003](https://doi.org/10.1103/PhysRevD.76.082003)

LIGO Collaboration: Abbott, B. P., et al. (2007). Search for gravitational-wave bursts in LIGO data from the fourth science run. *Classical and Quantum Gravity*, 24(22), 5343-5369. [doi:10.1088/0264-9381/24/22/002](https://doi.org/10.1088/0264-9381/24/22/002)

LIGO Collaboration: Abbott, B. P., et al. (2007). Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806 20 hyperflare of 27 December 2004 using LIGO. *Physical Review D*, 76(6). [doi:10.1103/PhysRevD.76.062003](https://doi.org/10.1103/PhysRevD.76.062003)

McCarthy, M., Travers, M., Kalmus, P., Gottlieb, C., & Thaddeus, P. (1997). Microwave spectroscopy of the carbon chain radical C<sub>11</sub>H. *Chemical Physics Letters*, 264(1-2), 252-256. [doi:10.1016/S0009-2614\(96\)01242-0](https://doi.org/10.1016/S0009-2614(96)01242-0)

Travers, M., McCarthy, M., Kalmus, P., Gottlieb, C., & Thaddeus, P. (1996). Laboratory detection of the linear cyanopolyynes HC<sub>11</sub>N. *Astrophysical Journal*, 469(1), L65-L68. [doi:10.1086/310254](https://doi.org/10.1086/310254)

Travers, M., McCarthy, M., Kalmus, P., Gottlieb, C., & Thaddeus, P. (1996). Laboratory detection of the cyanopolyynes HC<sub>13</sub>N. *Astrophysical Journal*, 472(1), L61-L62. [doi:10.1086/310359](https://doi.org/10.1086/310359)

McCarthy, M., Travers, M., Kalmus, P., Gottlieb, C., & Thaddeus, P. (1996). Laboratory detection of the C<sub>9</sub>H radical. *Astrophysical Journal*, 467(2), L125-L127. [doi:10.1086/310208](https://doi.org/10.1086/310208)

## **Talks and Presentations (partial list)**

*Stratocumulus Cloud Transitions in the SE Pacific from GOES Observations*. American Meteorological Society Annual Meeting (Poster). Phoenix, Arizona, January 9, 2019.

*Spatial Statistical Data Fusion of AIRS and CrIMSS Near Surface T and RH*. Jet Propulsion Laboratory, 398K Group Meeting. September 4, 2018.

## **Professional Activities**

2017 Atmospheric Infrared Sounder (AIRS) Senior Review

Visitors hosted: Johannes Muelmenstaedt (October 11 2018); Maria Paola Manzi (July 30 2016 to August 28 2016)

Reviewer for: *Geophysical Research Letters*; *Journal of Climate*; *Monthly Weather Review*; *various astrophysical journals*

## **Courses Taught**

**California Institute of Technology**

Dept. of Physics, Math, and Astronomy:

Physics 1b: Electromagnetism and Special Relativity (Instructor of record: Fiona Harrison)

## **Mentoring**

### **Postdoctoral Researchers:**

#### **California Institute of Technology**

Dept. of Physics, Math, and Astronomy:

*Lucia Santamaria* (joint w/ A. Weinstein), 2011-2012

### **Graduate Students:**

#### **Jet Propulsion Laboratory:**

Science Data Modeling and Computing Group:

*Eva Nygren* (joint w/ Gunilla Svensson; visited JPL from Stockholm University, February 2018), February 2018-present

#### **California Institute of Technology**

Dept. of Physics, Math, and Astronomy:

*Leo Singer* (joint w/ A. Weinstein), 2011-2012

### **Undergraduates:**

#### **California Institute of Technology**

Dept. of Physics, Math, and Astronomy:

*Nick Eminizer*, 2012 (SURF summer student from Carnegie Mellon University)

*James H.C. Scargill*, 2011 (SURF summer student from University of Oxford)

*Clio Sleator*, 2011 (SURF summer student from Columbia University)

*Bryance Oyang*, 2011 (SURF summer student from Caltech)

*Giles Colclough*, 2010 (SURF summer student from University of Oxford)

*Katherine E. Kaufman*, 2010 (SURF summer student from UCLA)

#### **Columbia University**

Dept. of Physics:

*Rubab Khan* (joint w/ Szabolcs Marka), 2007-2008

## **Public Outreach**

### **Articles for General Audiences**

Peter Kalmus, Kim Cobb, and David Romps. "[We study the climate. We chose not to fly to D.C. for a conference on it.](#)" *Washington Post*, December 10, 2018.

Kim Cobb, Peter Kalmus, and David Romps. "[AGU Should Support Its Members Who Fly Less.](#)" *Eos*, December 7, 2018.

Peter Kalmus. "[The Best Medicine for My Climate Grief.](#)" *YES! Magazine*, August 9, 2018.

Peter Kalmus. "[Pruitt's Out, But What We Need Are Local Leaders Who Will Act on Climate.](#)" *YES! Magazine*, July 6, 2018.

Peter Kalmus. "[Thoughts on Climate Action from a Scientist Who Gave Up Flying.](#)" *Sierra Magazine*, March 9, 2018.

Peter Kalmus. "[A Radical Vision for Food: Everyone Growing It for Each Other.](#)" *YES! Magazine*, December 25, 2017.

Peter Kalmus. "[Why Did Climate Scientists Emit 30,000 Tonnes of CO2 This Weekend?](#)" *The Guardian*, December 11, 2017. (N.B. I do not write headlines for my articles.)

Peter Kalmus. "[Why Thanksgiving Is the Perfect Time to Give Up Meat.](#)" *YES! Magazine*, November 21, 2017.

Peter Kalmus. "[Family Life Without Fossil Fuels—Slow and Satisfying.](#)" *YES! Magazine*, August 7, 2017.

Peter Kalmus. "[Who Owns the Future of California's Energy? Its Residents.](#)" *YES! Magazine*, September 28, 2017.

Peter Kalmus. "[A Clear Choice: My Fossil Fuels—or 5.6 Million People Fleeing a Hurricane.](#)" *YES! Magazine*, September 8, 2017.

Peter Kalmus. "[The Trick to Make Capitalism Help Solve Climate Change.](#)" *YES! Magazine*, July 12, 2017.

Peter Kalmus. "[After the March for Science, Keep Moving.](#)" *YES! Magazine*, April 21, 2017.

Peter Kalmus. "[To My Fellow Climate Scientists: Be Human, Be Brave, Speak Truth.](#)" *YES! Magazine*, February 7, 2017.

Peter Kalmus. "[The Best Reason to Ride a Bike.](#)" *YES! Magazine*, July 25, 2016.

Peter Kalmus. "[Real Life Hacks to Cut Your Carbon Footprint \(Plus: A Personal Emissions Calculator\).](#)" *YES! Magazine*, March 14, 2016.

Peter Kalmus. "[Infographic: The Surprising Ways You Consume Oil Every Day.](#)" *YES! Magazine*, February 24, 2016.

Peter Kalmus. "[How Far Can We Get Without Flying?](#)" *YES! Magazine*, February 11, 2016.

### **Invited Public Lectures, Workshops, Panels, and Events (partial list)**

Invited talk (remote), "How (and why) to Fly Less in Science." The James Hutton Institute, Aberdeen, Scotland. January 23, 2019.

Invited talk and panel, Declaration of Climate Emergency hosted by The Climate Mobilization and Malibu Foundation. Sunset Gower Studios, Los Angeles, California. January 13, 2019.

Invited talk, "What You Can Do About Climate Breakdown," hosted by Phoenix Chapter of Citizens' Climate Lobby. Tempe, Arizona, January 8, 2019.

Invited talk, "What You Can Do About Climate Breakdown," hosted by Los Angeles Chapter of the Sierra Club, Stories Books and Café, December 4, 2018.

Haskell STEAM Elementary School. Spoke with 150 3<sup>rd</sup> grade students about climate change and solutions. November 29, 2018.

Invited panel discussion before screening of "The Cat That Changed America" at the Zorthian Ranch. Altadena, California, November 14, 2018.

Invited panel discussion following presentation of "Dr. Keeling's Curve" sponsored by the Sierra Club at the Broad Stage. Santa Monica, California, September 30, 2018.

Invited presentation and panel discussion, Congress of Neighborhood Councils. Los Angeles City Hall, September 22, 2018.

Book reading, Vroman's Bookstore. Pasadena, California, August 9, 2017.

### **Popular Media (interviewed/quoted/cited, partial list)**

Film: *Being the Change: A New Kind of Climate Documentary* (2018).

Television: KCET *SoCal Connected* (2018).

Theatre: *Dr. Keeling's Curve* (scientific advisor, 2018).

Radio: PRI (*The World*); CBC Radio (*As It Happens*); numerous regional radio shows.

Print/online (weekly/monthly): *Vanity Fair Italia*: June 21, 2017 interview by Ferdinando Cotugno;

Eos, December 7, 2018: “AGU Should Support Its Members Who Fly Less,” with Kim Cobb and David Romps.

Print/online (daily): *New York Times*; *Washington Post*; *Los Angeles Times*; *The Guardian*; *Pasadena Weekly*: August 3, 2017 interview by Bliss Bowen; *cityatlas.com*: April 15, 2016 “A Scientist Pioneers a Low-Carbon Lifestyle,” interview by Alice Goldsmith; *qz.com* [“Stop screaming at us about climate change — and start inspiring us to take action.”](#) May 16, 2017 interview by Jill Neimark; *conversations.org*: September 17, 2015 “The Question of Progress,” interview by Richard Whittaker;