

Rainer Weiss

Publications :

“Magnetic Moments and Hyperfine Structure Anomalies of Cs_{133} , Cs_{135} , and Cs_{137} ” *Phys. Rev.* 105, 590 (1957), with H.H. Stroke, V. Jaccarino, and D.S. Edmonds.

“Molecular Beam Electron Bombardment Detector,” *Rev. Sci. Instr.* 32, 397 (1961).

“A Search for a Frequency Shift of 14.4 KeV Photons on Traversing Radiation Fields,” *Physics Letters* 1, 342 (1962), with L. Grodzins.

“Stark Effect and Hyperfine Structure of Hydrogen Fluoride,” *Phys. Rev.* 131, 659 (1963).

“The Cesium Fountain Experiment: The Paucity of Slow Atoms,” *Festschrift for J.R. Zacharias*, MIT Historical Collection (1965)

“A Gravimeter to Monitor the ${}_0\text{S}_0$ Dilational Mode of the Earth,” *J. Geophys. Res.* 70, 5615 (1966), with B. Block.

“Experimental Test of the Freundlich Red-Shift Hypothesis,” *Phys. Rev.* 155, 1412 (1967), with G. Blum.

“Electric and Magnetic Field Probes,” *Amer. J. Phys.* 35, 1047 (1967).

“Laser-induced Fluorescence in a Molecular Beam of Iodine,” *Phys. Rev. Lett.* 20, 91 (1968), with S. Ezekiel.

“A Measurement of the Isotropic Background Radiation in the Far Infrared,” *Phys. Rev. Lett.* 24, 742 (1970), with D. Muehlner.

“Electromagnetically Coupled Broadband Gravitational Antenna,” *Quarterly Progress Report, Research Lab. of Electronics, M.I.T.*, 105, 54 (1972).

“Balloon Measurements of the Far Infrared Background Radiation,” *Phys. Rev. D* 7, 326 (1973), with D. Muehlner.

“Further Measurements of the Submillimeter Background at Balloon Altitude,” *Phys. Rev. Lett.* 30, 757 (1973), with D. Muehlner.

“Measurements of the Phase Fluctuations in a He-Ne Zeeman Laser,” *Rev. Sci. Instr.* 45, 1060 (1974), with D.K. Owens.

“The Oldest Fossil,” *Technology Review* 78, 56 (1975).

“A Large Beam Sky Survey at Millimeter and Submillimeter Wavelengths made from Balloon Altitudes,” *Astrophysical Journal* 231, 702 (1979) with D. K. Owens and D. Muehlner.

“Gravitational Radiation - The Status of the Experiments and Prospects for the Future,” in *Sources of Gravitational Radiation*, Cambridge University Press, Cambridge, England (1979).

“Monolithic Silicon Bolometers,” *Journal of Infrared and Millimeter Waves* 1 (1980), with P.M. Downey, F.J. Bachner, J.P. Donnelly, W.T. Lindley, R.W. Mountain and D. J. Silversmith.

“Monolithic Silicon Bolometers,” *Applied Optics* 23, 915 (1984), with P.M. Downey, A.D. Jeffries, S.S. Meyer, F.J. Bachner, J.P. Donnelly, W.R. Lindley, R.W. Mountain, D.J. Silversmith.

“Measurements of the Cosmic Background Radiation,” *Annual Review of Astronomy and Astrophysics* 18, 489 (1980).

“The COBE Project,” *Physica Scripta* 21, 670 (1980).

“A Search for the Sunyaev-Zel’dovich Effect at Millimeter Wavelengths,” *Ap. J. Let.* 271 L1 (1983), with S.S. Meyer and A.D. Jeffries.

“Measurements of the Anisotropy of the Cosmic Background Radiation and Diffuse Galactic Emission at Millimeter and Submillimeter Wavelengths,” *Ap. J.* 332, 596 (1988), with M. Halpern, R. Benford, S. Meyer, D. Muehlner.

“A Preliminary Measurement of the Cosmic Microwave Background Spectrum by the *Cosmic Background Explorer (COBE)* Satellite” *Ap. J.* 354, L37 (1990), with J.C. Mather, E.S. Cheng, R.E. Eplee, Jr., R.B. Isaacman, S.S. Meyer, R.A. Shafer, E.L. Wright, C.L. Bennett, N.W. Boggess, E. Dwek, S. Gulkis, M.G. Hauser, M.Janssen, T. Kelsall, P.M. Lubin, S.H. Moseley, Jr., T.L. Murdock, R.F. Silverberg, G.F. Smoot, D.T. Wilkinson.

“*COBE* Differential Microwave Radiometers: Instrument Design and Implementation” *Ap. J.* 360, 685 (1990), with G. Smoot, C. Bennett, R. Weber, J. Maruschak, R. Ratliff, M. Janssen, J. Chitwood, L. Hilliard, M. Lecha, R. Mills, R. Patschke, C. Richards, C. Backus, J. Mather, M. Hauser, D. Wilkinson, S. Gulkis, N. Boggess, E. Cheng, T. Kelsall, P. Lubin, S. Meyer, H. Moseley, T. Murdock, R. Shafer, R. Silverberg, E. Wright.

“Interferometric Gravitational Wave Detectors” in *Proceedings of the Twelfth International Conference on General Relativity and Gravitation*, ed N. Ashby, D. Bartlett and W. Wyss, Cambridge University Press, p 331 (1990)

“Early Results from the Cosmic Background Explorer (COBE)” *Observatories in Earth Orbit and Beyond*, Y Kondo (ed.), Kluwer Academic Publishers 9-18 (1990), with Mather, J.C, Hauser, M.G., Bennett, C.L., Boggess, N.W., Cheng, E.S., Eplee, R.E., Freudenreich, H.T., Isaacman, R.B., Kelsall, T., Lisse, C.M., Moseley, S.H., Shafer, R.A., Silverberg, R.F., Spiesman, G.N., Toller, G.N., Weiland, J.L., Gulkis, S., Janssen, M., Lubin, P.M., Meyer, S.S., Murdock, T.L., Smoot, G.F., Wilkinson, D.T., Wright, E.L.

“Early Results from the Far Infrared Spectrophotometer (FIRAS)” *After the First Three Minutes AIP Conference Proc* 222 43 (1990) with J. C. Mather, E. S. Cheng, R. A. Shafer, R. E. Eplee, R. B. Isaacman, D. J. Fixsen, S. M. Read, S. S. Meyer and E. L. Wright

“Preliminary DMR Measurements of the CMB Isotropy” *After the First Three Minutes AIP Conference Proc* 222 95 (1990) with G.F. Smoot, C. L. Bennett, A. Kogut, J. Aymon, C. Backus, G. De Amici, K. Galuk, P. D. Jackson, P. Keegstra, L. Rokke, L. Tenorio, S. Gulkis, M. Hauser, M. Janseen, J. C. Mather, D. T. Wilkinson, E. L. Wright, N. W. Boggess, E. S. Cheng, T. Kelsall, P. Lubin, S. Meyer, S. H. Moseley, T. L. Murdock, R. A. Shafer and R. F. Silverberg

“First Results of the COBE Satellite Measurement of the Anisotropy of the Cosmic Background Radiation” *Advances in Space Research* 11, (2)193, (1991) with G.F. Smoot, C.L. Bennett, A. Kogut, J. Aymon, C. Backus, G. De Amici, K. Galuk, P. D. Jackson, P. Keegstra, L. Rokke, L. Tenorio, S. Torres, S. Gulkis, M.G. Hauser, M. Janssen, J.C. Mather, D.T. Wilkinson, E. L. Wright, N.W. Boggess, E.S. Cheng, T. Kelsall, P. Lubin, S. Meyer, S.H. Moseley, T.L. Murdock, R.A. Shafer, R.F. Silverberg.

“Preliminary Results from the *COBE* Differential Microwave Radiometers: Large-Angular-Scale Isotropy of the Cosmic Microwave Background” *Ap. J.* 371, L1 (1991) with G.F. Smoot, C.L. Bennett, A. Kogut, J. Aymon, C. Backus, G. De Amici, K. Galuk, P. D. Jackson, P. Keegstra, L. Rokke, L. Tenorio, S. Torres, S. Gulkis, M.G. Hauser, M. Janssen, J.C. Mather, D.T. Wilkinson, E. L. Wright, N.W. Boggess, E.S. Cheng, T. Kelsall, P. Lubin, S. Meyer, S.H. Moseley, T.L. Murdock, R.A. Shafer, R.F. Silverberg.

“Prototype Michelson Interferometer with Fabry–Perot Cavities” *Applied Optics* 30, 3133 (1991) with D. Shoemaker, P. Fritschel, J. Giaime, N. Christensen.

Review of *The Detection of Gravitational Waves* Edited by D. G. Blair Cambridge University Press 1991, *Nature* 353, 616 (1991)

“Preliminary Spectral Observations of the Galaxy with a 7° Beam by the Cosmic Background Explorer (COBE)” *Astrophysical Journal* 381, 200 (1991) with Wright, E.L., Bennett, C.L., Cheng, E.S., Fixsen, J.D., Eplee, R.E., Isaacman, R.B., Mather, J.C., Meyer, S.S., Read, S.M., Shafer, R.A., Boggess, N.W., Gulkis, S., Hauser, M.G., Janssen, M., Kelsall, T., Lubin, P.M., Moseley, S.H., Murdock, T.L., Silverberg, R.F., Smoot, G.F., and Wilkinson, D.T.

“COBE Differential Microwave Radiometers (DMR): Calibration Techniques” *Astrophysical Journal* 391 466 (1992), with Bennett, C.L., Smoot, G.F., Janssen, M., Gulkis, S., Kogut, A., Hinshaw, S., Backus, C., Hauser, M.G., Mather, J.C., Rokke, L., Tenorio, L., Wilkinson, D.T., Wright, E.L., Aymon, J., DeAmici, G., Boggess, N.W., Cheng, E.S., Jackson, P.D., Keegstra, P., Kelsall, T., Kummerer, R., Lineweaver, C., Lubin, P.M., Meyer, S.S., Moseley, S.H., Murdock, T.L., Santana, J., Shafer, R.A., Silverberg, R. F.

“Demonstration of light recycling in a Michelson interferometer with Fabry–Perot cavities” *Applied Optics* 31 1412 (1992) with P. Fritschel and D. Shoemaker

“Frequency Match of the Nd:YAG Laser at $1.064\ \mu$ with a line in CO_2 ” *Applied Optics* 31 1910 (1992) with P. Fritschel.

“LIGO: The Laser Interferometer Gravitational-Wave Observatory” *Science* 256, 325 (1992) with A. Abramovici, W. E. Althouse, R. W. P. Drever, Y. Gursel, S. Kawamura, F. J. Raab, D. Shoemaker, L. Sievers, R. E. Spero, K. S. Thorne, R. E. Vogt, S. E. Whitcomb and M. E. Zucker

“Structure in the COBE DMR First Year Maps” *Astrophysical Journal Letters* 396 L1 (1992), with G.F. Smoot, C. L. Bennett, A. Kogut, E.L. Wright, J. Aymon, N. W. Boggess, E. S. Cheng, G. De Amici, S. Gulkis, M.G. Hauser, G. Hinshaw, C. Lineweaver, K. Loewenstein, P. D. Jackson, M. Janssen, E. Kaita, T. Kelsall, P. Keegstra, P. Lubin, J. Mather,

S. S. Meyer, S. H. Moseley, T. Murdock, L. Rokke, R. F. Silverberg, L. Tenorio and D. T. Wilkinson

“Preliminary Separation of Galactic and Cosmic Microwave Emission for the COBE - DMR” *Astrophysical Journal Letters* 396 L7 (1992), with C. L. Bennett, G. F. Smoot, G. Hinshaw, E. L. Wright, A. Kogut, G. De Amici, S. S. Meyer, D. T. Wilkinson, S. Gulkis, M. Janssen, N. W. Boggess, E. S. Cheng, M. G. Hauser, T. Kelsall, J. C. Mather, S. H. Moseley, T. L. Murdock and R. F. Silverberg

“Interpretation of the CMB Anisotropy Detected by the COBE DMR ” *Astrophysical Journal Letters* 396 L13 (1992), with E. L. Wright, S. S. Meyer, C. L. Bennett, N. W. Boggess, E. S. Cheng, M. G. Hauser, A. Kogut, C. Lineweaver, J. C. Mather, G. F. Smoot, S. Gulkis, G. Hinshaw, M. Janssen, T. Kelsall, P. M. Lubin, S. H. Moseley, T. L. Murdock, R. A. Shafer, R. F. Silverberg, and D. T. Wilkinson

“ The COBE Mission: Its Design and Performance Two Years After Launch” *Astrophysical Journal* 397 420 (1992) with N. W. Boggess, J. C. Mather, C. L. Bennett, E. S. Cheng, S. Gulkis, M. G. Hauser, M. A. Janssen, T. Kelsall, P. M. Lubin, S. S. Meyer, S. H. Moseley, T. L. Murdock, R. A. Shafer, R. F. Silverberg, G. F. Smoot, D. T. Wilkinson, and E. L. Wright

“COBE Differential Microwave Radiometers (DMR): Preliminary Systematic Error Analysis” *Astrophysical Journal* 401 1 (1992) with A. Kogut, G. F. Smoot, C. L. Bennett, E. L. Wright, J. Aymon, G. De Amici, G. Hinshaw, P. D. Jackson, E. Kaita, P. Keegstra, C. Lineweaver, K. Loewenstein, L. Rokke, L. Tenorio, N. W. Boggess, E. S. Cheng, S. Gulkis, M. G. Hauser, M. A. Janssen, T. Kelsall, J. C. Mather, S. Meyer, S. H. Moseley, T. L. Murdock, R. A. Shafer, R. F. Silverberg and D. T. Wilkinson

“ Scientific Results from the Cosmic Background Explorer (COBE)” *Proceedings of the National Academy of Science* 90 4766 (1993) with C.L. Bennett, N.W. Boggess, E.C. Cheng, M.G. Hauser, T. Kelsall, J.C. Mather, S. H. Moseley, Jr, T. L. Murdock, R. A. Shafer, R. F. Silverberg, G. F. Smoot, and E. L. Wright

“Measurement of the Cosmic Microwave Background Spectrum by the COBE FIRAS” *Astrophysical Journal* 420 439 (1994) with J. C. Mather, E. S. Cheng, R. E. Eplee, D. J. Fixsen, T. Hewagama, R. B. Isaacman, K. A. Jensen, S. S. Meyer, P. D. Noerdlinger, L. P. Rosen, R. A. Shafer, E. L. Wright, C. L. Bennett, N. W. Boggess, M. G. Hauser, T. Kelsall, S. H. Moseley, R. F. Silverberg, G. F. Smoot and D. T. Wilkinson

“Cosmic Microwave Background Dipole Spectrum Measured by the COBE FIRAS” *Astrophysical Journal* 420 445 (1994) with D. J. Fixsen, W. Barnes, E. S. Cheng, D. A. Cottingham, R. E. Eplee, R. B. Isaacman, J. C. Mather, S. S. Meyer, S. M. Read, R. A. Shafer, E. L. Wright, C. L. Bennett, N. W. Boggess, T. Kelsall and R.F. Silverberg

“Interpretation of the COBE FIRAS Spectrum” *Astrophysical Journal* 420 450 (1994) with E. L. Wright, J. C. Mather, D. J. Fixsen, R. A. Shafer, C. L. Bennett, N. W. Boggess, E. S. Cheng, R. F. Silverberg and G. F. Smoot.

“Calibration of the Far Infrared Absolute Spectrophotometer (FIRAS) on the Cosmic Background Explorer (COBE)” *Astrophysical Journal* 420 457 (1994) with D. J. Fixsen,

E. S. Cheng, D. A. Cottingham, R. E. Eplee, T. Hewagama, R. B. Isaacman, K. A. Jensen, J. C. Mather, S. S. Meyer, R. D. Noerdlinger, S. M. Read, L. P. Rosen, R. A. Shafer, A. R. Trenholme, C. L. Bennett, N. W. Boggess, D. T. Wilkinson and E. L. Wright

“Dipole Anisotropy in the COBE-DMR First-Year Sky Maps” *Astrophysical Journal* 419 1 (1994) with A. Kogut, C. Lineweaver, G. F. Smoot, C. L. Bennett, A. Banday, N.W. Boggess, E. S. Cheng, G. De Amici, G. Hinshaw, P. D. Jackson, M. Janssen, P. Keegstra, K. Loewenstein, L. Tenorio, D. T. Wilkinson and E. L. Wright

“Cosmic Temperature Fluctuations from Two Years of COBE Differential Microwave Radiometers Observations” *Astrophysical Journal* 436 423 (1994) with C. L. Bennett, A. Kogut, G. Hinshaw, A. J. Banday, E. L. Wright, K. Gorski, D. T. Wilkinson, G. F. Smoot, S. S. Meyer, J. C. Mather, P. Lubin, K. Loewenstein, C. Lineweaver, P. Keegstra, E. Kaita, P. D. Jackson and E. S. Cheng

”Improved Sensitivity in a Gravitational Wave Interferometer and Implications for LIGO” *Physics Letters A* 218 157 (1996) with A. Abramovici, W. Althouse, J. Camp, D. Durance, J.A. Giaime, A. Gillespie, S. Kawamura, A. Kuhnert, T. Lyons, F. J. Raab, R. L. Savage, Jr., D. Shoemaker, L. Sievers, R. Spero, R. Vogt, S. Whitcomb, M. Zucker

“The COBE Diffuse Infrared Background Experiment Search for the Cosmic Infrared Background: I. Limits and Detections” *Astrophysical Journal* 508 25 (1998) with M. G. Hauser, R. G. Arendt, T. Kelsall, E. Dwek, N. Odegard, J. L. Weiland, H. T. Freudenreich, W. T. Reach, R. F. Silverberg, S. H. Moseley, Y. C. Pei, J. C. Mather, G. F. Smoot, D. T. Wilkinson and E. L. Wright.

“Gravitational Radiation” *Reviews of Modern Physics (Centenary Supplement)* 71 S187 (1999) and in *More Things in Heaven and Earth, A Celebration of Physics at the Millenium* Benjamin Bederson, Editor Springer Verlag (1999)

“LIGO and the Detection of Gravitational Waves” *Physics Today* 52 44 (1999) B.Barish and R. Weiss (strongly edited by Bertram Schwartzschild),

”Laser Interferometer Gravitational-wave Observatory Beam Tube Component and Module Leak Testing” *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films* 18 1794 (2000) with Carpenter, W.E.; Shaw, P.B.; Jones, L.K.

“Precision alignment of the LIGO 4km arms using the dual-frequency differential global positioning system” *Review of Scientific Instruments* 72 (2001) with W.E. Althouse, S.D. Hand, L.K. Jones and A. Lazzarini.

“Lock Acquisition of a Gravitational Wave Interferometer ” *Optics Letters* 27 598 (2002) with M. Evans, N. Mavalvala, P. Fritschel, R. Bork. B. Bhawal, R. Gustafson, W. Kells, M. Landry, D. Sigg, R. Weiss, S. Whitcomb. H. Yamamoto

“Detector Description and Performance for the First Coincidence Observations between LIGO and GEO” *Nuclear Instruments and Methods in Physics Research A* 517 154 (2004) The LIGO Scientific Collaboration

“Analysis of LIGO data for gravitational waves from binary neutron stars” *Physical Review D* 69 122001 (2004) The LIGO Scientific Collaboration

“Setting upper limits on the strength of periodic gravitational waves from PSR J1939+2134 using the first science data from the GEO600 and LIGO detectors ” Phys Rev D 69 082004 (2004) The LIGO Scientific Collaboration

“First upper limits from LIGO on gravitational wave bursts” Physical Rev D 94 102001 (2004) The LIGO Scientific Collaboration

“Analysis of first LIGO science data for stochastic gravitational waves” Physical Review D 69 122004 (2004) The LIGO Scientific Collaboration

“Limits on Gravitational-Wave Emission from Selected Pulsars Using LIGO Data” Phys Rev Let 94 181103 (2005) The LIGO Scientific Collaboration

“Search for gravitational waves associated with the gamma ray burst GRB030329 using the LIGO detectors” Phys Rev D 72 042002 (2005) The LIGO Scientific Collaboration

“Upper limits on gravitational wave bursts in LIGO’s second science run” Phys Rev D 72 062001 (2005) The LIGO Scientific Collaboration

“Search for gravitational waves from galactic and extra-galactic binary neutron stars” Phys Rev D 72 082001 (2005) The LIGO Scientific Collaboration

“Search for gravitational waves from primordial black hole binary coalescences in the galactic halo” Phys Rev D 72 082002 (2005) The LIGO Scientific Collaboration

“Upper Limits on a Stochastic Background of Gravitational Waves” Phys Rev Let 95 221101 (2005) The LIGO Scientific Collaboration

“First all-sky upper limits from LIGO on the strength of periodic gravitational waves using the Hough transform” Phys Rev D 72 102004 (2005) The LIGO Scientific Collaboration

”Upper Limits from LIGO and TAMA Detectors on the Rate of Gravitational Wave Bursts” Phys Rev D 72 122004 (2005) The LIGO Scientific Collaboration

”Joint LIGO and TAMA300 Search for Gravitational Waves from Inspiralling Neutron Star Binaries” Phys Rev D 73 102002 (2006) The LIGO Scientific Collaboration

”Search for Gravitational Waves from Binary Black Hole Inspirals in LIGO Data” Phys Rev D 73 062001 (2006) The LIGO Scientific Collaboration

”Search for Gravitational Wave Bursts in LIGO’s Third Science Run” Class. Quantum Grav 23 529 (2006) The LIGO Scientific Collaboration

”David Wilkinson” New Dictionary of Scientific Biography, Editor Noretta Koertge, Charles Scribner’s Sons (2007)

”Searching for Stochastic Background of Gravitational Waves with LIGO” ApJ 659 918 (2007) The LIGO Scientific Collaboration

”First Cross-Correlation Analysis of Interferometric and Resonant-Bar Gravitational-Wave Data for Stochastic Backgrounds” Phys Rev D 76 022001 (2007) The LIGO Scientific Collaboration

"Coherent searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: results from the second LIGO science run" Phys Rev D 76 082001 (2007) The LIGO Scientific Collaboration

"A Joint search for gravitational wave bursts with AURIGA and LIGO" Class. Quantum Grav 25 095004 (2008) The LIGO Scientific Collaboration

"Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806-20 hyperflare of December 27, 2004 using LIGO" Phys Rev D 76 062003 (2007) The LIGO Scientific Collaboration

"Search for gravitational- wave bursts in LIGO data from the fourth science run" Class. Quantum Grav 24 5343 (2007) The LIGO Scientific Collaboration

"Search for gravitational waves associated with 39 Gamma-ray bursts using data from the second, third and fourth LIGO runs" Phys Rev D 77 062004 (2008) The LIGO Scientific Collaboration

"Upper limits on gravitational wave emission from 78 radio pulsars" Phys Rev D 76 042001 (2007) The LIGO Scientific Collaboration

"All sky search for periodic gravitational waves in LIGO S4 data" Phys Rev D 77 022001 (2008) The LIGO Scientific Collaboration

"Searching for stochastic background of gravitational waves with LIGO" Ap J 659 918 The LIGO Scientific Collaboration

"Upper limit map of a background of gravitational waves" Phys Rev D 76 082003 (2007) The LIGO Scientific Collaboration

"First cross-correlation analysis of interferometric and resonant-bar gravitational wave data for stochastic backgrounds" Phys Rev D 76 022001 (2007) The LIGO Scientific Collaboration

"Implications for the origin of GRB 070201 from LIGO observations" Ap J 681 1419 (2008) The LIGO Scientific Collaboration

"Beating the spin down limit on gravitational wave emission from the Crab Pulsar" Ap J Let 683 45 (2008) The LIGO Scientific Collaboration

"Search for Gravitational Wave Bursts from Soft Gamma Repeaters" Phys Rev Let 101 211102 (2008) The LIGO Scientific Collaboration

"All-Sky LIGO Search for Periodic Gravitational Waves in the Early S5 Data" Phys Rev Let 102 111102 (2009) The LIGO Scientific Collaboration

"CMBR Research at MIT shortly after the discovery - is there a blackbody peak" in *Finding the Big Bang* edited by P.J.E. Peebles, L.A. Page Jr, R.B. Partridge, Cambridge University Press (2009)

"LIGO: The Laser Interferometer Gravitational-Wave Observatory" Rep Prog Phys 72 076901 (2009) The LIGO Scientific Collaboration

"Search for Gravitational Waves from Low Mass Binary Coalescences in the First Year of LIGO's S5 Data" *Phys Rev D* 79 122001 (2009) The LIGO Scientific Collaboration

"First LIGO search for gravitational wave bursts from cosmic (super) strings" *Phys Rev D* 80 062002 (2009) The LIGO Scientific Collaboration

"Search for High Frequency Gravitational Wave Bursts in the First Calendar Year of LIGO's Fifth Science Run" *Phys Rev D* 80 102002 (2009) The LIGO Scientific Collaboration

"Stacked Search for Gravitational Waves from the 2006 SGR 1900+14 Storm" *Astrophys J* 701 L68 (2009) The LIGO Scientific Collaboration

"Search for gravitational-wave bursts in the first year of the fifth LIGO science run" *Phys Rev D* 80 102001 (2009) The LIGO Scientific Collaboration

"Search for gravitational wave ringdowns from perturbed black holes in LIGO S4 data" *Phys Rev D* 80 062001 (2009) The LIGO Scientific Collaboration

"Einstein@Home search for periodic gravitational waves in early S80 042003 (2009) The LIGO Scientific Collaboration

"Search for Gravitational Waves from Low Mass Compact Binary Coalescence in 186 Days of LIGO's fifth Science Run" *Phys Rev D* 80 047101 (2009) The LIGO Scientific Collaboration

"Observation of a kilogram-scale oscillator near its quantum ground state" *New J Phys* 11 073032 (2009) The LIGO Scientific Collaboration

"An upper limit on the stochastic gravitational-wave background of cosmological origin" *Nature* 460 990 (2009) The LIGO Scientific Collaboration

"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 1438 (2010) The LIGO Scientific Collaboration

"Searches for gravitational waves from known pulsars with S5 LIGO data" *Astrophysical Journal* 713 671 (2010) The LIGO Scientific Collaboration

"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 1453 (2010) The LIGO Scientific Collaboration

"All-sky search for gravitational-wave bursts in the first joint LIGO-GEO-VIRGO run" *Phys Rev D* 81 102001 (2010) The LIGO Scientific Collaboration

"Predictions for the Rates of Compact Binary Coalescences Observable by Ground-based Gravitational-wave Detectors" *Class. Quantum Grav* 27 173001 (2010) The LIGO Scientific Collaboration

"Search for Gravitational Waves from Compact Binary Coalescence in LIGO and VIRGO Data from S5 and VSR1" *Phys Rev D* 82 102001 (2010) The LIGO Scientific Collaboration

"First search for gravitational waves from the youngest known neutron star" *Astrophysical Journal* **722** 1504 (2010) The LIGO Scientific Collaboration

"Calibration of the LIGO Gravitational Wave Detectors in the Fifth Science Run" *Nucl. Instrum. Meth.* **A624** 223 (2010) The LIGO Scientific Collaboration

"A search for gravitational waves associated with the August 2006 timing glitch of the Vela Pulsar" *Phys Rev D* **83** 042001 (2011) The LIGO Scientific Collaboration

"Search for Gravitational-wave Bursts from Six Magnetars" *Astrophysics Journal* **L35** 734 (2011) The LIGO Scientific Collaboration

Articles submitted for publication:

"Short History of Clock and Electric Resonance Research in the J.R. Zacharias Laboratory at MIT" *History of Molecular Beam Electric Resonance Spectroscopy*, J. Zorn (Ed.) (1991)

"Scientific Results from COBE" *Conference Proceedings on Unified Symmetry in the Small and in the Large*, January 25, 1993 with J. C. Mather, M. G. Hauser, C. L. Bennett, N. W. Boggess, E. S. Cheng, T. Kelsall, S. H. Moseley, T. L. Murdock, R. A. Shafer, R. F. Silverberg, G. F. Smoot and E. L. Wright

"Optics Development for LIGO" Presented at TAMA Workshop 1996 with S. Whitcomb, G. Billingsley, J. Carri, A. Golovitser, D. Jungwirth, W. Kells, H. Yamamoto, B. Bochner, Y. Hefetz, P. Saha

Published Conference Reports (in lieu of formal publication):

"The MIT Prototype Gravitational Wave Detector" in *Proceedings of the Fourth Marcel Grossman Meeting on General Relativity*, ed R. Ruffini p 591 (1985) with J. Livas, R. Benford, A. Jeffries, P. Linsay, P. Saulson, D. Shoemaker

"Interferometric Gravitational Wave Detection at MIT" *13th Texas Symposium on Relativistic Astrophysics*, ed M. Ulmer Singapore: World Scientific, p 15 (1986) with R. Benford, M. Burka, N. Christensen, M. Eisgruber, P. Fritschel, A. Jeffries, J. Kovalik, P. Linsay, J. Livas, P. Saulson.

"Progress on the MIT 5-Meter Interferometer" *International Symposium on Experimental Gravitational Physics*, Guangzhou, China (1987) with R. Benford, M. Burka, N. Christensen, M. Eisgruber, P. Fritschel, A. Jeffries, J. Kovalik, P. Linsay, J. Livas, P. Saulson.

Major reports:

"Report of the Sub-Panel on Relativity and Gravitation," *Management and Operations Working Group for Shuttle Astronomy*, NASA (1976) with P. Bender, C. Misner, R.V. Pound.

"Study Report for the Cosmic Background Explorer," *Goddard Space Flight Center, NASA* (1977) with S. Gulkis, M. Hauser, J. Mather, G. Smoot, D. Wilkinson.

“Report of the Detector Study Panel ” NASA (1979) with P. Richards.

“A Study of a Long Baseline Gravitational Wave Antenna System” NSF (1983) with P. Linsay, P. Saulson S. Whitcomb.

“Task Group on Fundamental Physics and Chemistry” National Academy of Sciences Report on Gravitational Physics (1987) with P. Bender, A. Berlad, R. Donnelly, F. Dyson, W. Fairbank, G. Homsy, J. Langer, J. Naugle, R. Pellat, J. Reynolds, R. Ruffini, D. Saville, R. Schrieffer.

Short report in “Space Science in the 21st Century” AAS 88-120

“Gravitational Wave Astrophysics” in *Particle and Nuclear Astrophysics and Cosmology in the Next Millenium* Proceedings of the 1994 Snowmass Summer Study E.W. Kolb and R.D. Peccei ed. with A. Abramovici, P. Bender, R. Drever, L.S. Finn, R. Flaminio, L. Grishchuk, W. Johnson, K. Kawabe, P. Michelson, N. Robertson, A. Rudiger, R.J. Sandeman, P. Saulson, D. Shoemaker, K. Thorne, M. Tinto, M. Tobar, S. Whitcomb

”A New Science Strategy for Space Astronomy and Astrophysics” Report of the Task Group on Space Astronomy and Astrophysics, National Academy Press, Washington, D.C. 1997, Panel on Cosmology and Fundamental Physics, M. Hauser (chair), E. Boldt, K. Kellerman, P. Lubin, R. Mushotzky, A. Readhead, B. Sadoulet, D. Spergel, M. Turner, C. Will .

“Particle, Nuclear and Gravitational-Wave Astrophysics” Report of the decadal study for astronomy and astrophysics *Astronomy and Astrophysics in the New Millenium*, National Academy Press, Washington DC. 2000. Tom Gaisser (chair)

Report of “Task Force on Cosmic Microwave Background Research” Commissioned by DoE,NASA,NSF; J.Bock, S. Church, M. Devlin, G. Hinshaw, A. Lange, A. Lee, L. Page, B. Partridge, J. Ruhl, M. Tegmark, P. Timbie, R. Weiss (chair), B. Winstein, M. Zaldarriaga , July 11, 2005

Laser Interferometer Gravitational-wave Observatory (LIGO) studies:

- “Scattering by Residual Gas” (1987)
- “Shot Noise in Two Beam Interferometers” (1988)
- “Thermal Considerations for the LIGO Tubes” (1988)
- “Pressure Changes in the Beam Tubes with Temperature and Some Outgassing Theory” (1988)
- “Dust Accumulation on Optics, Scattering and Requirements on Clean Area for the LIGO” (1988)
- “Frequency Stabilization–Fundamental Noise Terms” (1988)
- “Analysis of Reflection Sensing of a Cavity by the Pound/Drever Technique” (1988)
- “Theory of the Fabry-Perot Cavity” (1988)
- “Thermal Noise of a Fiber Suspension” (1989)
- “An Environmental Monitoring System for the LIGO” (1989)
- “Dubinin-Radushkevich Isotherms Applied to LIGO Outgassing” (1989)
- “Optical Properties of the LIGO Beam Tubes” (1989)
- “Optical Delay Line Scaling” (1989)
- “Response of a Free Mass Interferometric Antenna to Gravitational Wave Excitation,” (1989)
- “Vacuum Compatible Materials” (1990)
- “Simple Formulation of Coincidence Sensitivity of a Pair of Interferometers” (1990)
- “Analysis of the Alignment of the Initial LIGO interferometer” (1990)
- “Criteria for LIGO Site Selection” (1990)
- “Data Analysis in Prototype Research and Preparations for LIGO” (1990)
- “Common Properties of Losses in String Modes and Pendulum Motion using the Complex Impedance Approach”
- “GRAVNOISEPLOT: A computer program to evaluate the LIGO Detector Noise Budget” (1990)
- “Vacuum Compatible Passive Isolation Systems” (1990)
- “Analysis of an Externally Modulated Recycled Interferometer” with D. Shoemaker (1991)
- “Transfer Functions for Fabry Perot Cavities” (1991)
- “Water Outgassing from Unbaked and Low Temperature Baked Stainless Steel” (1991)
- “Compilation of Data on Hydrogen in Stainless and Ferritic Steel” (1991)

“A Measurement of the Resistivity and Temperature Coefficient of the Resistivity of 304L Tube Steel” (1991)

“ Suggestions for Isolation Stack Specifications for the Initial LIGO” (1991)

“The MODINT program: a computer program to investigate properties of a modulated interferometer” (1991)

“Analysis of an Externally Modulated Interferometer with Asymmetric Michelson Arms” (Concept proposed by Whitcomb) (1991)

“Analysis of an Externally Modulated Interferometer with Unequal Cavity Storage Times” (Concept Proposed by Drever) (1991)

“Considerations for Beam Expanding Telescopes” (1992)

“Information for Computer Stray Light Study of the LIGO” (1992)

“Phase Noise Analysis of the Computer Stray Light Study” (1992)

“ Standards for Archiving LIGO Optical Data” (1992)

“ Proposed Experimental Study of Phase Noise in the Initial LIGO Interferometer” with D. Shoemaker (1992)

“Perturbation Methods Applied to Imperfect Mirrors and the Loss and Contrast Defect in LIGO Interferometers”

“Residual Gas Analyser Air Signature Analysis” (1992)

“ Considerations on Air Leaks in the LIGO” (1992)

“ Compilation of Beam Tube Vacuum Requirements and Test Data” (1992)

“ Analysis of Vacuum Bursts in the LIGO and Limits from Current Data” (1992)

“Study of Extrinsic Noise in Phase Maps of Optical Surfaces: Consistency of ZYGO Phase Front Interferometer Measurements” (1992)

“ Analysis of the Effects of Coating Birefringence” (1993)

“Measurement of the Heat Capacity and Infrared Emissivity of 304L Tube Steel” (1993)

“ Analysis of Phase Noise from Fluctuations of Adsorbed Layers on Mirrors” (1993)

“ Optical Phase Spectrum of Gas Bursts” (1993)

“Surface Specification for the LIGO Arm Cavity Mirrors” (1993)

“ Organic Molecules in the LIGO Beam Tubes” (1993)

“ Suggested Data Formats for the LIGO Beam Tube Qualification Tests” (1993)

“ Evaluation of Issues in the Choice of Steel for the LIGO Beam Tubes” (1993)

“ Scientific Requirements for the LIGO Vacuum System” (1993)

“ A Strategy for Reducing the Risk of Hydrocarbons in the LIGO Beam Tubes” (1993)

“IFORESP: A computer program to calculate the transfer functions of externally modulated interferometers” (1993)

“ Leak Detection in the 2km LIGO Beam Tube Modules” (1993)

“ The Evolution of Enhanced and Advanced Interferometers in the LIGO” (1993)