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Born: 30 October 1954, Baltimore, Md., USA **Citizenship:** U.S.A.

Education:

1981	Ph. D. in Physics, Princeton University
1978	A. M. in Physics, Princeton University
1976	A. B. <i>magna cum laude</i> in Physics, Harvard College

Present Position: Martin A. Pomerantz '37 Professor of Physics, Syracuse University
and Adjunct Professor of Physics, Louisiana State University

Previous Positions:

July 2010 – June 2013: Chair, Department of Physics, Syracuse University
Jan 2000 – Dec 2001: Visiting Professor, Department of Physics, LSU
Jan 2000 – Dec 2000: Interferometer Commissioning Leader
LIGO Livingston Observatory, Livingston LA, and
Visiting Scholar, California Institute of Technology
Jan 1991 – Jun 1999: Associate Professor of Physics, Syracuse University
Sep 1989 - Dec 1990: Visiting Fellow and Research Associate
Joint Institute for Laboratory Astrophysics, Boulder, CO
Oct 1985 - Aug 1989: Principal Research Scientist, MIT
June 1984 - Sep 1985: Sponsored Research Technical Staff, MIT
Oct 1981- May 1984: Postdoctoral Research Associate, MIT

Courses Taught:

PHY 101, "Major Concepts of Physics" (w/ lab), Fall 2006, 2005, 2003, 2002, 2001
PHY 221, "General Physics Laboratory I", Spring 2009, 2004, 2003, 2002, 2001
PHY 222, "General Physics Laboratory II", Spring 2009, 2004, Spring 2003, Spring 2002
PHY 250, "Physics Journal Workshop" Fall 1999, Spring 2009, 2010, 2011, 2013
PHY 398, "Junior Seminar for Energy ILM", Spring 2012, Spring 2013, Spring 2014
PHY 498, "Senior Capstone for Energy ILM", Fall 2012
AST 104/304, "Stars, Galaxies, and the Universe" Spring 1999, 2005, 2006 (labs only)
AST 202, "Descriptive Astronomy" Spring 1998, Spring 1997, Spring 1996 (2 sections, 1 Honors), Spring 1995 (2 sections, 1 Honors), Spring 1994 (2 sections, 1 Honors), Spring 1993 (2 sections), Spring 1992 (2 sections)
AST 300, "Galaxies and the Universe", Spring 2008, 2007
SCI 613, "Descriptive Astronomy" Spring 1998, 1997, 1996, 1994, 1992
PHY 277, "The Exploration of Natural Phenomena", Fall 1991, University College
PHY 451, "Problems of Contemporary Physics", Fall 2007
PHY 300/360, "Vibrations, Waves & Optics", Fall 2009, 2008

Publications (refereed publications marked with “*”)

2013

“Gravitational-waves from known pulsars: results from the initial detector era”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1309.4027

“A directed search for continuous Gravitational Waves from the Galactic Center”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1309.6221
* Physical Review D **88**, 102022

“Search for long-lived gravitational-wave transients coincident with long
gamma-ray bursts”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1309.6160
* Physical Review D **88**, 122004

“First Searches for Optical Counterparts to Gravitational-wave Candidate Events”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1310.2314

“Constraints on cosmic (super)strings from the LIGO-Virgo gravitational-wave
detectors”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1310.2384

“Application of a Hough search for continuous gravitational waves on data from
the 5th LIGO science run”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1311.2409

“Prospects for Localization of Gravitational Wave Transients by the Advanced
LIGO and Advanced Virgo Observatories”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1304.0670

“Parameter estimation for compact binary coalescence signals with the first
generation gravitational wave detector network”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1304.1775
* Physical Review D **88**, 062001

“Gravitational wave detection: principles and practice”

Peter R. Saulson

Comptes rendus – Physique **14**, 288-305

“A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007”

The LIGO Scientific Collaboration and the Virgo Collaboration and the ANTARES Collaboration

Arxiv: 1205.3018

* Journal of Cosmology and Astroparticle Physics **2013**, 008

“Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1207.7176

* Physical Review D **87**, 042001

“Search for Gravitational Waves from Binary Black Hole Inspiral, Merger and Ringdown in LIGO-Virgo Data from 2009-2010”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1209.6533

* Physical Review D **87**, 022002

“Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light”

The LIGO Scientific Collaboration

* Nature Photonics **7**, 613

2012

“Large-angle scattered light measurements for quantum-noise filter cavity design studies”

Fabian Magana-Sandoval, Rana Adhikari, Valera Frolov, Jan Harms, Jacqueline Lee, Shannon Sankar, Peter R. Saulson, and Joshua R. Smith

Journal of the Optical Society of America A **29**, 1722-1727

“A hierarchical method for vetoing noise transients in gravitational-wave detectors”

Joshua R. Smith, Thomas Abbott, Eiichi Hirose, Nicolas Leroy, Duncan MacLeod, Jess McIver, Peter Saulson, Peter Shawhan

Arxiv: 1107.2948

* Classical and Quantum Gravity **28**, 235005

“Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1109.3498

* Astronomy and Astrophysics **539**, A124

“All-sky search for periodic gravitational waves in the full S5 LIGO data”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1110.0208

* Physical Review **D85**, 022001

“Search for Gravitational Waves from Low Mass Compact Binary Coalescences in LIGO’s Sixth Science Run and Virgo’s Science Runs 2 and 3”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1111.7314

* Physical Review **D85**, 082002

“Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600-1000 Hz”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1112.5004

* Physical Review **D85**, 122001

“First Low-Latency LIGO+Virgo Search for Binary Inspirals and their Electromagnetic Counterparts”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1112.6005

* Astronomy and Astrophysics **541**, A155

“Implications for the Origin of GRB 051103 from LIGO Observations”

The LIGO Scientific Collaboration

Arxiv: 1201.4413

* Astrophysical Journal **755**, 2

“Search for Gravitational Waves from Intermediate Mass Binary Black Holes”

The LIGO Scientific Collaboration and the Virgo Collaboration

Arxiv: 1201.5999

* Physical Review **D 85**, 102004

“All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run”

The LIGO-Scientific Collaboration and the Virgo Collaboration

Arxiv: 1202.2788

* Physical Review **D85**, 122007

“Virgo data characterization and impact on gravitational wave searches”

The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1203.5613
* Classical and Quantum Gravity **29**, 155002

“Swift Follow-Up Observations Of Candidate Gravitational-Wave Transient Events”
The LIGO Scientific Collaboration and the Virgo Collaboration and the SWIFT Collaboration
Arxiv: 1205.1124
* Astrophysical Journal Supplement **203**, 28

“Search for gravitational waves associated with gamma-ray bursts during LIGO science run 6 and Virgo science run 2 and 3”
The LIGO Scientific Collaboration and the Virgo Collaboration
Arxiv: 1205.2216
* Astrophysical Journal **760**, 12

2011

“Josh Goldberg and the physical reality of gravitational waves”
Peter R. Saulson
* General Relativity and Gravitation 43, 3289 - 3299
DOI: 10.1007/s10714-011-1237-z

“A gravitational wave observatory operating beyond the quantum shot-noise limit”
The LIGO Scientific Collaboration
* Nat. Phys. **7**, 962-965
online: doi:10.1038/nphys2083

“Directional limits on gravitational waves using LIGO S5 science data”
The LIGO Scientific Collaboration and the Virgo Collaboration
* Physical Review Letters **107**, 271102

“Beating the spin-down limit on gravitational wave emission from the Vela pulsar”
The LIGO Scientific Collaboration and the Virgo Collaboration
* Astrophysical Journal **737**, 93

“Search for gravitational waves from binary black hole inspiral, merger, and ringdown”
The LIGO Scientific Collaboration and the Virgo Collaboration
* Physical Review D **83**, 122005

“Search for Gravitational Wave Bursts from Six Magnetars”

The LIGO Scientific Collaboration, the Virgo Collaboration, and R. L. Apteekar, W. V. Boynton, M. S. Briggs, T. L. Cline, V. Connaughton, D. D. Frederiks, N. Gehrels, J. O., Goldsten, D. Golovin, A. J. van der Horst, K. C. Hurley, Y. Kaneko, A. von Kienlin, C. Kouveliotou, H. A. Krimm, L. Lin, I. Mitrofanov, M. Ohno, V. D. Pal’shin, A. Rau, A. Sanin, M. S. Tashiro, Y. Terada, and K. Yamaoka

* Astrophysical Journal 734, L35

“A search for gravitational waves associated with the August 2006 timing glitch of the Vela pulsar”

The LIGO Scientific Collaboration

arXiv:1011.1357

* Physical Review D 83, 042001

2010

“Calibration of the LIGO Gravitational Wave Detectors in the Fifth Science Run”

The LIGO Scientific Collaboration

* Nuclear Instruments and Methods A624, 223 - 240

“First search for gravitational waves from the youngest known neutron star”

The LIGO Scientific Collaboration

* Astrophysical Journal 722, 1504 - 1513

“Search for Gravitational Waves from Compact Binary Coalescence in LIGO and Virgo Data from S5 and VSR1”

The LIGO Scientific Collaboration and the Virgo Collaboration

* Physical Review D 82, 102001

“Predictions for the Rates of Compact Binary Coalescences Observable by Ground-based Gravitational-wave Detectors”

The LIGO Scientific Collaboration and the Virgo Collaboration

* Classical and Quantum Gravity 27, 173001

“All-sky search for gravitational-wave bursts in the first joint LIGO-GEO-Virgo run”

The LIGO Scientific Collaboration and the Virgo Collaboration

* Physical Review D 81, 102001

“Search for gravitational-wave bursts associated with gamma-ray bursts using data from LIGO Science Run 5 and Virgo Science Run 1”

The LIGO Scientific Collaboration and the Virgo Collaboration

* Astrophysical Journal **715**, 1438 - 1452

“Searches for gravitational waves from known pulsars with S5 LIGO data”
The LIGO Scientific Collaboration and the Virgo Collaboration
* *Astrophysical Journal* **713**, 671 - 685

“Search for gravitational-wave inspiral signals associated with short Gamma-Ray Bursts during LIGO’s fifth and Virgo’s first science run”
The LIGO Scientific Collaboration and the Virgo Collaboration
* *Astrophysical Journal* **715**, 1453 - 1461

“Angular instability due to radiation pressure in the LIGO gravitational wave detector”
E. Hirose, K. Kawabe, D. Sigg, R. Adhikari, and P.R. Saulson
* *Applied Optics* **49**, 3474 - 3484

2009

“Reviewer dislikes *Hoax*, perhaps intensely”
Alan Sokal and Peter Saulson
Physics Today, vol. 62 no. 7, pp. 11-12

“First LIGO search for gravitational wave bursts from cosmic (super)strings”
The LIGO Scientific Collaboration
* *Physical Review D* **80**, 062002

“Search for High Frequency Gravitational Wave Bursts in the First Calendar Year of LIGO’s Fifth Science Run”
The LIGO Scientific Collaboration
* *Physical Review D* **80**, 102002

“Stacked Search for Gravitational Waves from the 2006 SGR 1900+14 Storm”
The LIGO Scientific Collaboration
* *Astrophysical Journal* **701**, L68-L74

“Search for gravitational-wave bursts in the first year of the fifth LIGO science run”
The LIGO Scientific Collaboration
* *Physical Review D* **80**, 102001

“Search for gravitational wave ringdowns from perturbed black holes in LIGO S4 data”
The LIGO Scientific Collaboration
* *Physical Review D* **80**, 062001

“Einstein@Home search for periodic gravitational waves in early S5 LIGO data”
The LIGO Scientific Collaboration

* Physical Review D 80, 042003

“Search for Gravitational Waves from Low Mass Compact Binary Coalescence in 186 Days of LIGO’s fifth Science Run”

The LIGO Scientific Collaboration

* Physical Review D 80, 047101

“Observation of a kilogram-scale oscillator near its quantum ground state”

The LIGO Scientific Collaboration

* New Journal of Physics 11, 073032

“An upper limit on the stochastic gravitational-wave background of cosmological origin”

The LIGO Scientific Collaboration and the Virgo Collaboration

* Nature 460, 990

“The Einstein@Home search for periodic gravitational waves in LIGO S4 data”

The LIGO Scientific Collaboration

* Physical Review D 79, 022001

“LIGO: The Laser Interferometer Gravitational-Wave Observatory”

The LIGO Scientific Collaboration

* Reports on Progress in Physics 72, 076901

“All-sky LIGO Search for Periodic Gravitational Waves in Early S5 Data”

The LIGO Scientific Collaboration

* Physical Review Letters 102, 111102

“Search for Gravitational Waves from Low Mass Binary Coalescences in the First Year of LIGO’s S5 Data”

The LIGO Scientific Collaboration

* Physical Review D 79, 122001

2008

“Review of *Beyond the Hoax: Science, Philosophy, and Culture* by Alan Sokal”

Peter R. Saulson

Physics Today, vol. 61 no. 12, pp. 56-8

“Search for Gravitational Wave Bursts from Soft Gamma Repeaters”

The LIGO Scientific Collaboration

* Physical Review Letters, vol. 101, 211102.

“The LSC glitch group: monitoring noise transients during the fifth LIGO science run”,

L. Blackburn, L. Cadonati, S. Caride, S. Caudill, S. Chatterji, N. Christensen, J.

Dalrymple, S. Desai, A. Di Credico, G. Ely, J. Garofoli, L. Goggin, G. Gonzalez, R. Gouaty, C. Gray, A. Gretarsson, D. Hoak, T. Isogai, E. Katsavounidis, J. Kissel, S. Klimenko, R. A. Mercer, S. Mohapatra, S. Mukherjee, F. Raab, K. Riles, P. Saulson, R. Schofield, P. Shawhan, J. Slutsky, J. R. Smith, R. Stone, C. Vorvick, M. Zanolin, N. Zotov, and J. Zweizig

* Classical and Quantum Gravity, vol. 25, 184004

Beating the spin-down limit on gravitational wave emission from the Crab pulsar
The LIGO Scientific Collaboration

* Astrophysical Journal Letters, vol. 683, p. 45

Implications for the Origin of GRB 070201 from LIGO Observations
The LIGO Scientific Collaboration

* Astrophysical Journal, vol. 681, p. 1419

“All-sky search for periodic gravitational waves in LIGO S4 data”

The LIGO Scientific Collaboration

* Physical Review D, vol. 77, 022001

“Search for gravitational waves from binary inspirals in S3 and S4 LIGO data”

The LIGO Scientific Collaboration

* Physical Review D, vol. 77, 062002

“First joint search for gravitational-wave bursts in LIGO and GEO600 data”

The LIGO Scientific Collaboration

* Classical and Quantum Gravity, vol. 25, 245008.

“Search for Gravitational Waves Associated with 39 Gamma-Ray Bursts Using Data from the Second, Third, and Fourth LIGO Runs”

The LIGO Scientific Collaboration

* Physical Review D, vol. 77, 062004

“Search of S3 LIGO data for gravitational wave signals from spinning black hole and neutron star binary inspirals”

The LIGO Scientific Collaboration

* Physical Review D, vol. 78, 042002

“A Joint Search for Gravitational Wave Bursts with AURIGA and LIGO”

The LIGO Scientific Collaboration

* Classical and Quantum Gravity, vol. 25, 095004

“Coherent searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: results from the second LIGO science run,”

The LIGO Scientific Collaboration

* *Physical Review D*, vol. 76, 082001.

“Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806-20 hyperflare of December 27, 2004 using LIGO,”

The LIGO Scientific Collaboration

* *Physical Review D*, vol 76, 062003.

“Search for gravitational-wave bursts in LIGO data from the fourth science run,”

The LIGO Scientific Collaboration

* *Classical and Quantum Gravity*, vol. 24, pp. 5323-5369.

“Upper Limits on Gravitational Wave Emission from 78 Radio Pulsars,”

The LIGO Scientific Collaboration

* *Physical Review D*, vol. 76, 042001.

“Upper limit map of a background of gravitational waves,”

The LIGO Scientific Collaboration

* *Physical Review D*, vol. 76, 082003.

“First Cross-Correlation Analysis of Interferometric and Resonant-Bar Gravitational-Wave Data for Stochastic Backgrounds,”

The LIGO Scientific Collaboration

* *Physical Review D*, vol. 76, 022001.

“Searching for a Stochastic Background of Gravitational Waves with LIGO”

The LIGO Scientific Collaboration

* *Astrophysical Journal* **659**, 918 – 930; astro-ph/0608606

“Status of gravitational wave detectors”

Peter R. Saulson

Frontier Detectors for Frontier Physics, Proceedings of X Pisa Meeting,
La Biodola, Isola d’Elba, Italy

Elsevier, F. Cervelli, F. Forti, and R. Paoletti, eds., pp. 529-530

2006

“Status of Ground-Based Gravitational Wave Detectors”

Peter R. Saulson

Proceedings of Sixth International LISA Symposium,
Goddard Space Flight Center, Greenbelt, MD

AIP Conference Proceedings Volume 873

S. M. Merkowitz and J. C. Livas, eds., pp. 41-48

“A Personal Appreciation of the Numerical Relativity Data Analysis Meeting”
Matters of Gravity, electronic newsletter of the Topical
Group on Gravitation of the American Physical Society

“Search for Gravitational Waves from Binary Black Hole Inspirals in LIGO Data”
The LIGO Scientific Collaboration
* gr-qc/0509129; *Physical Review D* **73**, 062001

“Joint LIGO and TAMA300 Search for Gravitational Waves from Inspiralling
Neutron Star Binaries”
The LIGO Scientific Collaboration and the TAMA Collaboration
* gr-qc/0512078; *Physical Review D* **73**, 102004

“Search for gravitational wave bursts in LIGO’s third science run”
The LIGO Scientific Collaboration
* gr-qc/0511146; *Classical and Quantum Gravity* **23**, S29-S39

2005

“Monitoring the Thermal and Non-Thermal Excitation of Fibers”
Andri M. Gretarsson and Peter R. Saulson
* *Review of Scientific Instruments* **76**, 054502

“Limits on Gravitational-Wave Emission from Selected Pulsars Using LIGO
Data”
The LIGO Scientific Collaboration
* *Physical Review Letters* **94**, 181103

“A Search for Gravitational Waves Associated with the Gamma Ray Burst
GRB030329 Using the LIGO Detectors”
The LIGO Scientific Collaboration
* *Physical Review D* **72**, 042002

“Upper Limits on Gravitational Wave Bursts in LIGO’s Second Science Run”
The LIGO Scientific Collaboration
* gr-qc/0505029; *Physical Review D* **72**, 062001

“Search for Gravitational Waves from Galactic and Extra-Galactic Binary
Neutron Stars”
The LIGO Scientific Collaboration
* gr-qc/0505041; *Physical Review D* **72**, 082001

“Search for Gravitational Waves from Primordial Black Hole Binary
Coalescences in the Galactic Halo”
The LIGO Scientific Collaboration

* gr-qc/0505042; *Physical Review D* **72**, 082002

“Upper Limits from the LIGO and TAMA Detectors on the Rate of Gravitational-Wave Bursts”

The LIGO Scientific Collaboration and the TAMA Collaboration

* gr-qc/0507081; *Physical Review D* **72**, 122004

“Upper Limits on a Stochastic Background of Gravitational Waves”

The LIGO Scientific Collaboration

* gr-qc/0507254; *Physical Review Letters* **95**, 221101

“First All-sky Upper Limits from LIGO on the Strength of Periodic Gravitational Waves Using the Hough Transform”

The LIGO Scientific Collaboration

* gr-qc/0508065; *Physical Review D* **72**, 102004

“Receiving Gravitational Waves”

Peter R. Saulson

100 Years of Relativity: Space-time Structure: Einstein and Beyond

edited by Abhay Ashtekar, World Scientific, Singapore

“Gravitational Waves”

Peter R. Saulson and J. Anthony Tyson

Encyclopedia of Physics (3rd edition)

edited by R. G. Lerner and G. L. Trigg, Wiley-VCH, Berlin

2004

“Very high quality factor measured in annealed fused silica”

Alexandr Ageev, Belkis Cabrera Palmer, Antonio De Felice, Steven D. Penn, and Peter R. Saulson

* *Classical and Quantum Gravity* **21**, pp. 3887 – 3892

“Analysis of First LIGO Science Data for Stochastic Gravitational Waves”

The LIGO Scientific Collaboration

* gr-qc/0312088; *Physical Review D* **69**, 122004

“Analysis of LIGO Data for Gravitational Waves from Binary Neutron Stars”

The LIGO Scientific Collaboration

* gr-qc/0308069; *Physical Review D* **69**, 122001

“First Upper Limits from LIGO on Gravitational Wave Bursts”

The LIGO Scientific Collaboration

* gr-qc/0312056; *Physical Review D* **69** 102001

“Setting Upper Limits on the Strength of Periodic Gravitational Waves Using the First Science Data from the GEO600 and LIGO Detectors”

The LIGO Scientific Collaboration

* gr-qc/0308050; *Physical Review D* **69** 082004

“Understanding ‘Social’”

Peter R. Saulson

Social Studies of Science **34/1**, pp. 99 – 101.

“Detector Description and Performance for the First Coincidence Observations Between LIGO and GEO”

The LIGO Scientific Collaboration

* gr-qc/0308043; *Nuclear Instruments and Methods* **517/1-3**, pp. 154 - 179

2003

Proceedings of SPIE, Vol. 4856 *Gravitational-Wave Detection*, edited by Mike Cruise and Peter Saulson (SPIE, Bellingham, WA 2003) 300 pp.

“Data Analysis with Multiple Detectors: Plans and Prospects for Coordinated International Analysis of Interferometric Detector Data”

Peter R. Saulson

Proceedings of SPIE, Vol. 4856 *Gravitational-Wave Detection*, edited by Mike Cruise and Peter Saulson (SPIE, Bellingham, WA 2003), pp. 204-211.

“Mechanical loss associated with silicate bonding of fused silica”

Joshua R. Smith, Gregory M. Harry, Joe C. Betzwieser, Andri M. Gretarsson, David A. Guild, Scott E. Kittelberger, Michael J. Mortonson, Steven D. Penn, and Peter R. Saulson

* *Classical and Quantum Gravity* **20**, 5039-47

2002

“Thermal Noise in Interferometric Gravitational Wave Detectors due to Dielectric Optical Coatings”

Gregory M. Harry, Andri M. Gretarsson, Peter R. Saulson, Scott E. Kittelberger, Steven D. Penn, William J. Startin, Sheila Rowan, Martin M. Fejer, D. R. M.

Crooks, Gianpietro Cagnoli, Jim Hough, and Norio Nakagawa

* *Classical and Quantum Gravity* **19**, 897-917.

2001

“10 Years in Gravitational Wave Detection”

Peter R. Saulson

Matters of Gravity, Number 18 (Fall 2001), pp. 6-8.

“Physics of Gravitational Wave Detection: Resonant and Interferometric Detectors”

Peter R. Saulson

Gravity: From the Hubble Length to the Planck Length, Proceedings of the XXVIth SLAC Summer Institute, ed. Lance Dixon, SLAC-R-538, pp.113-162.

“High Quality Factor Measured in Fused Silica”

Steven D. Penn, Gregory M. Harry, Andri M. Gretarsson, Scott E. Kittelberger, Peter R. Saulson, John J. Schiller, Joshua R. Smith, and Sol O. Swords

* *Review of Scientific Instruments* **72**, 3670-73.

“Life Inside a Case Study”, “Confessions of a Believer”, and “Pilgrims’ Progress”

Peter R. Saulson

in *The One Culture? A Conversation about Science*, eds. Jay A. Labinger and Harry Collins, Chicago: University of Chicago Press.

2000

“Effect of Optical Coating and Surface Treatments on Mechanical Loss in Fused Silica”

A. M. Gretarsson, G. M. Harry, S. D. Penn, P. R. Saulson, J. J. Schiller, and W. J. Startin

Gravitational Waves (Third Edoardo Amaldi Conference), ed. Sydney Meshkov, Melville, NY: American Institute of Physics, 2000, pp. 306-312.

“Pendulum mode thermal noise in advanced interferometers: a comparison of fused silica fibers and ribbons in the presence of surface loss”

Andri M. Gretarsson, Gregory M. Harry, Steven D. Penn, Peter R. Saulson, William J. Startin, Sheila Rowan, Gianpietro Cagnoli, and Jim Hough

* *Physics Letters A* **270**, 108-114.

“Interferometric Gravitational Wave Detection: Accomplishing the Impossible”

Peter R. Saulson

* *Classical and Quantum Gravity* **17**, 2441-2448.

1999

“What Will We Learn from the Detection of Gravitational Waves?”

Peter R. Saulson

in *General Relativity and Relativistic Astrophysics*, proceedings of the Eighth Canadian Conference, Montreal, Quebec, June 1999, eds. C.P. Burgess and R.C. Myers, Melville, NY: American Institute of Physics, 1999, pp. 25-34.

Gravitational Physics: Exploring the Structure of Space and Time

by the Committee on Gravitational Physics of the National Research Council

James B. Hartle, Eric G. Adelberger, Abhay V. Ashtekar, Beverly K. Berger, Gary T. Horowitz, Peter F. Michelson, Ramesh Narayan, Peter R. Saulson, David N. Spergel, Joseph H. Taylor, Saul A. Teukolsky, and Clifford M. Will
National Academy Press, Washington, 114 pp.

1998

“Dissipation mechanisms in pendulums and their implications for gravitational wave interferometers”

Y. L. Huang and Peter R. Saulson

* *Rev. Sci. Instrum.* **69**, 544-553

“Robert H. Dicke 1916-1997”

Peter R. Saulson

Astronomy & Geophysics **39** (1), February 1998, pp. 35-7

“Photoelastic measurement of anelasticity, and its implications for gravitational wave interferometers”

Mark A. Beilby, Peter R. Saulson, and Alex Abramovici

* *Rev. Sci. Instrum.* **69**, 2539-2545

“The mechanical quality factor of fused silica”

William J. Startin, Mark A. Beilby, and Peter R. Saulson

* *Rev. Sci. Instrum.* **69**, 3681-3689

1997

“If light waves are stretched by gravitational waves, how can we use light as a ruler to detect gravitational waves?”

Peter R. Saulson

* *Am. J. Phys.* **65** (6), June 1997, pp. 501-5

“How an interferometer extracts and amplifies power from a gravitational wave”

Peter R. Saulson

* *Class. Quantum Grav.* **14**, 2435-54

“Prospects for low thermal noise in gravitational wave interferometers”

Peter R. Saulson

in *Gravitational Wave Detection*, ed. K Tsubono, M.-K. Fujimoto, and K. Kuroda
Proceedings of the TAMA International Workshop on Gravitational Wave
Detection

Universal Academy Press, Tokyo, pp. 31-42

1996:

Review of *Mach's Principle: From Newton's Bucket to Quantum Gravity*

J. Barbour and H. Pfister, eds.

Classical and Quantum Gravity **13**, 2033.

1995:

"Gravitational Wave Astrophysics"

(PRS was editor of this review, written with 18 co-authors)

Particle and Nuclear Astrophysics and Cosmology in the Next Millennium

E.W. Kolb and R.D. Peccei, eds.

Singapore: World Scientific, p. 398.

"Brownian motion of a torsion pendulum with internal friction"

Gabriela I. Gonzalez and Peter R. Saulson

* *Physics Letters A* **201**, 12.

"Quality factors of stainless steel pendulum wires"

Yinglei Huang and Peter R. Saulson

First Edoardo Amaldi Conference on Gravitational Wave Experiments

E. Coccia, G. Pizzella, and F. Ronga, eds.

Singapore: World Scientific, p. 320.

Review of *Experimental Gravitation*, M. Karim and A. Qadir, eds.

in *Classical and Quantum Gravity* **12**, 1113.

1994:

Fundamentals of Interferometric Gravitational Wave Detectors

Peter R. Saulson

World Scientific Publishing Co., Singapore, 300 pp.

"The inverted pendulum as a probe of anelasticity"

Peter R. Saulson, Robin T. Stebbins, Frank D. Dumont, and Scott E. Mock

* *Review of Scientific Instruments* **65**, 182.

"A method for measuring the dependence of internal friction on strain"

Yinglei Huang and Peter R. Saulson

* *Review of Scientific Instruments* **65**, 2102.

"Brownian motion of a mass suspended by an anelastic wire"

Gabriela I. Gonzalez and Peter R. Saulson

* *Journal of the Acoustical Society of America* **96**, 207.

"PASCOS '94 Conference Report"

Peter R. Saulson

Matters of Gravity, (electronic newsletter) Summer 1994.

1993:

"Mechanical loss in fibers for low noise pendulums"

Joseph Kovalik and Peter R. Saulson

* *Review of Scientific Instruments* **64**, 2942.

1992:

Review of *The Detection of Gravitational Waves*, edited by David Blair
Science, 7 February 1992.

1991:

"Low frequency noise in gravitational wave interferometers", invited review
Gravitational Astronomy: Instrument Design and Astrophysical Prospects
edited by D.E. McClelland and H.-A. Bachor
World Scientific Publishing Co., Singapore, pp. 248 -70.

"A double pendulum vibration isolation system for a laser interferometric
gravitational wave antenna"

Michelle Stephens, Peter R. Saulson, and Joseph Kovalik

* *Review of Scientific Instruments* **62**, 924.

1990:

"Thermal noise in mechanical experiments"

Peter R. Saulson

* *Physical Review D* **42**, 2437.

"Active vibration isolation for precision mechanical measurements"

Peter R. Saulson

New and Exotic Phenomena '90, proceedings of the Twenty-Fifth

Rencontre de Moriond (Tenth Workshop), eds. O. Fackler and J. Tran Thanh Van
Editions Frontieres, Gif-sur-Yvette, France, p.203.

1988:

"Progress on the MIT 5-meter interferometer"

R. Benford, M. Burka, N. Christensen, M. Eisgruber, P. Fritschel, A. Jeffries,
J. Kovalik, P. Linsay, J. Livas, P.R. Saulson, and R. Weiss

International Symposium on Experimental Gravitational Physics,

proceedings of the meeting in Guangzhou, China, ed. by P.F. Michelson
World Scientific Publishing Co., Singapore, p. 312.

1987:

"Gravitational wave observatories"

A. Jeffries, P.R. Saulson, R. Spero, and M. Zucker

Scientific American **65** (no. 6), 50.

"Interferometric gravitational wave detection at MIT"

Peter R. Saulson, R. Benford, M. Burka, N. Christensen, M. Eisgruber,

P. Fritschel, A. Jeffries, J. Kovalik, P. Linsay, J. Livas, and R. Weiss

13th Texas Symposium on Relativistic Astrophysics, ed. by M. Ulmer

World Scientific Publishing Co., Singapore, p. 15.

1986:

"The smoothness of the 2.2 micron background"

S.P. Boughn, P.R. Saulson, and J.M. Uson

* *Astrophysical Journal* **301**, 17.

1984:

"Terrestrial gravitational noise on a gravitational wave antenna"

P.R. Saulson

* *Physical Review D* **30**, 732.

"Vibration isolation for broad-band gravitational wave detectors"

P.R. Saulson

* *Review of Scientific Instruments* **55**, 1315.

1983:

"Infrared photometry of the halo of M87"

S.P. Boughn and P.R. Saulson

* *Astrophysical Journal Letters* **265**, L55.

1981:

"A new limit on the mass-to-light ratio of the halo of NGC 4565"

S.P. Boughn, P.R. Saulson, and M. Seldner

* *Astrophysical Journal Letters* **250**, L15.

1979:

"Large-scale anisotropy in the 2.7 K radiation"

E.S. Cheng, P.R. Saulson, D.T. Wilkinson, and B.E. Corey

* *Astrophysical Journal Letters* **232**, L139.

Invited Lectures:

- 2013:
Winter School on Gravitational Wave Detection, RRCAT, Indore, India
- 2012:
OASIS, Syracuse
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre Island, TX (UT Brownsville)
- 2011:
Physics Seminar, Colgate University
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre Island, TX (UT Brownsville)
- 2010:
Engineering Colloquium, NASA Goddard Space Flight Center
University Neighbors Lecture Series, Syracuse
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre Island, TX (UT Brownsville)
International Summer School on Numerical Relativity and Gravitational Waves
APCTP, POSTECH, Pohang, Korea
- 2009:
Syracuse Stage, Lecture on Einstein for *Picasso at the Lapin Agile*
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre Island, TX (UT Brownsville)
OASIS, Syracuse
Sweet Lecture, Technology Association of Central New York
- 2008:
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre Island, TX (UT Brownsville)
- 2006:
Virgo Week, Cascina
Future Detectors for Future Physics, Elba
Gravitational Wave Advanced Detector Workshop, Elba
LISA Symposium, Goddard Space Flight Center
Physics at LHC, Cracow
Summer School on Gravitational Wave Astronomy
Café Scientifique, Syracuse

“outside expert” discussant, NASA press conference on numerical relativity

2005:

R.A.S. National Astronomy Meeting, Birmingham, U.K.
CLEO, Baltimore
NYS Section APS, Colgate University
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre
Island, TX (UT Brownsville)
Saturday Morning Physics, Syracuse University

2004:

Gravitational Wave Astronomy Workshop, Penn State
Physics Colloquium, University of Tennessee
Penn State Gravity Seminar
LIGO Hanford Observatory Public Lecture
Villa Mondragone International School of Gravitation and Cosmology
Summer School on Gravitational Wave Astronomy (10 lectures), South Padre
Island, TX (UT Brownsville)
Astrophysics Colloquium, Rochester Institute of Technology
Physics Colloquium, Harvey Mudd College

2003:

Physics Colloquium, Hamilton College
Physics Colloquium, Gran Sasso National Laboratory, L’Aquila, Italy
Presentation at Project Science Workshop, Aspen, CO

2002:

Elba Conference on Gravitational Waves
University of Indiana, Bloomington, Physics Colloquium
University of Maryland, Physics Colloquium and Gravitational Physics Seminar
Saturday Morning Physics Lecture, Syracuse University
New York State Section, American Physical Society, Syracuse NY
Texas State Section, American Physical Society, Brownsville TX
Physics Colloquium, SUNY Albany

2001:

Physics Colloquium, SUNY Buffalo

2000:

Aspen Workshop on Gravitational Waves and Their Detection
American Physical Society April Meeting
Louisiana State University, Physics Colloquium

1999:

American Physical Society Centennial Meeting

- 8th Canadian Conference on General Relativity and Relativistic Astrophysics
 International Conference on Experimental Gravitation, Samarkand
 Nazareth College, Public Lecture
- 1998:
- Aspen Center for Physics, Public Lecture
 - Aspen Workshop on Gravitational Waves and Their Detection
 - Swarthmore College, Physics Colloquium
 - University of Florida, Gainesville, two research seminars
 - Imperial College, London, Classical and Quantum Gravity Meeting
 - International Workshop on Thermal Noise, Perugia
 - SLAC Summer Institute, three lectures on gravitational wave detection
 - Relativity Seminar, Penn State
 - Physics Colloquium, University of Guelph (Ontario)
- 1997:
- Aspen Workshop on Gravitational Waves and Their Detection (review talk and workshop summary)
 - APS meeting, joint session of Topical Groups on Gravitation and on Precision Measurements and Fundamental Constants
 - University of Texas, Austin, Physics Colloquium
 - Thermal Noise Weekend, Stanford
- 1996:
- University of Massachusetts, Amherst, Physics Colloquium
 - University of Texas, Austin, Relativity Seminar
 - University of Glasgow, Gravitational Physics Seminar
 - New York State Section, American Physical Society
 - TAMA Workshop, Saitama, Japan
- 1995:
- Aspen Winter Conference on Gravitational Waves and their Detection
 - Unified Symmetry in the Small and the Large, Coral Gables
 - series of three invited seminars at Caltech
- 1994:
- Snowmass '94 Summer Study, Snowmass, Colorado
 - Astronomy Colloquium, University of Indiana
 - Mechanical/Aeronautical Engineering Colloquium, Syracuse University
 - Atomic Physics Seminar, University of Michigan
 - Research Seminar, University of California at Irvine
 - First International Workshop on Thermal Noise in Laser Interferometer Gravitational-Wave Detectors, Caltech: Co-organizer and speaker

1993:

Lecturer, School of Cosmology and Gravitation, Erice, Italy
Physics Colloquium, University of Pittsburgh
Atomic Physics Seminar, University of Massachusetts, Amherst
Inaugural Symposium, Center for Gravitation and Geometry, Penn State
Research Seminar, Laboratoire de l'Accelérateur Lineaire, Orsay, France
Research Seminar, Max-Planck-Institut für Quantenoptik, Garching, Germany
Research Seminar, Department of Physics and Astronomy, University of Glasgow

1990:

Symposium on Gravitational Wave Detectors, Canberra, Australia
Physics Colloquium, University of California at Santa Barbara
Physics Colloquium, Syracuse University
Research Seminar, University of Maryland, College Park

1989:

Physics Colloquium, University of Colorado, Boulder

1987:

Physics Colloquium, University of Illinois, Champaign-Urbana

1986:

Physics Colloquium, Columbia University

1985:

Physics Colloquium, University of Massachusetts, Amherst
Physics Colloquium, Stanford University
Astrophysics Colloquium, Massachusetts Institute of Technology

Research Grants:

Principal Investigator, "Moving Toward Gravitational Wave Detection with Advanced LIGO"

National Science Foundation Grant PHY-1205835

Awarded August 1, 2012: \$300,000

Continued August 1, 2013: \$300,000

Principal Investigator, "Toward Detection of Gravitational Waves with Enhanced LIGO and Advanced LIGO"

National Science Foundation Grant PHY-0854812

Awarded August 1, 2009: \$325,000

Continued August 1, 2010: \$325,000

Continued August 1, 2011: \$325,000

Principal Investigator, "Participation in LIGO's Search for Gravitational Wave Bursts"

National Science Foundation Grant PHY-0600259

Awarded April 1, 2006: \$310,000

Continued April 1, 2007: \$310,000

Continued April 1, 2008 \$310,000

Principal Investigator, "Research in Gravitational Wave Detection with LIGO"

National Science Foundation Grant PHY-0140335

Awarded August 15, 2002: \$400,000

Continued August 15, 2003: \$360,000

Continued August 15, 2004: \$300,000

Principal Investigator, "Thermal Noise Research for Advanced LIGO Interferometers"

National Science Foundation Grant PHY-9900775

Awarded August 15, 1999: \$297,882

Continued August 15, 2000: \$310,000

Continued August 15, 2001: \$320,000

Principal Investigator, "Thermal Noise in Test Masses and Suspensions for Gravitational Wave Interferometers"

National Science Foundation Grant PHY-9602157

Awarded August 15, 1996: \$194,548

Continued August 15, 1997: \$199,931

Continued August 15, 1998: \$205,699; Supplement Aug 15, 1998: \$89,000

Principal Investigator, "Thermal Noise and Pendulum Design for Gravitational Wave Interferometers"

National Science Foundation Grant PHY-9113902

Awarded August 15, 1991: \$125,081
Continued August 15, 1992: \$131,228
Continued August 15, 1993: \$137,800 plus supplement of \$45,000
Two-year extension for special creativity, August 15, 1994
 first year amount: \$161,122
 second year amount: \$201,156

Co-Investigator, "Incorporating Astronomy in Elementary School Curricula"
(Prof. Gianfranco Vidali, Principal Investigator)
National Aeronautics and Space Administration
Awarded 1992: \$5,000
Renewed 1993: \$5,000
Renewed 1994: \$6,000
Renewed 1995: \$6,000
Renewed 1996: \$6,000

Editorial Boards:

1994-2000: *Classical and Quantum Gravity*
1994-97: *Review of Scientific Instruments*
1991: Founding Editor, *Matters of Gravity*, an electronic newsletter

Service:

Member, LSC Executive Committee 1997 – 2007, 2009-2011, 2013 - present
Chair, LSC Elections and Membership Committee, 2007-2010
Member, Nominating Committee, American Physical Society, 2007-2009
Member, Committee of the International Society on General Relativity and Gravitation,
1994 – 2000, 2004-2013
Spokesperson, LIGO Scientific Collaboration, 2003 - 2007
NSF Physics Division Committee of Visitors, 2003
NSF Review Panel in Gravitational Physics, 2001
American Physical Society, Topical Group on Gravitation, delegate 1998-2001
LIGO Program Advisory Committee member, 1997 - 2003
National Research Council Committee on Gravitational Physics
(subcommittee of Physics “Decade Survey”)
LSU Physics Dept. Ad Hoc committee on LIGO, 1998
NSF Review Panel for LIGO-related proposals, 1997
NASA UVGRA proposal review panel, 1997
Gravity Probe B Science Advisory Committee 1997 to 2012
Chair, LIGO Pre-Program Advisory Committee, 1995-6
NSF Panel on the Future Use of LIGO, 1996
NSF Physics Division's Committee of Visitors, 1994
Proposal reviewer for NSF Program in Gravitational Physics

Referee for: *Physical Review*, *Physical Review Letters*, *Review of Scientific Instruments*,
Measurement Science and Technology, *Physics Letters A*, *Classical and Quantum
Gravity*, *Applied Optics*, *Applied Physics B*

Local Organizing Committee, PASCOS '94

Co-organizer, Josh Goldberg Symposium, 1995

Astronomy textbook reviews for J. Wiley and for Mosby Yearbook

Faculty Council, 2007 – 2008

Coronat Scholars Selection Committee, 2007, 2010

Chancellor's Inaugural Year Committee, 2004 - 5

Advisory Board on Writing in the College of Arts and Sciences, 2002

Meredith Professor Selection Committee, 1997-1999

College of Arts and Sciences Admissions Committee 1997-1999

Curriculum Committee, College of Arts and Sciences, 1993 - 96 (chair '95-6)

Ad Hoc Liberal Arts Core Reconsideration Committee, CAS, 1992-3.

Physics Department Liaison to the Future Professoriate Project, Graduate School,
1992-1995

Member, Physics Department Curriculum Revision Committee, 2008 -

Physics Department Undergraduate Advisor, 2005 -

Physics Department Graduate Committee 2001-04

Physics Department Undergraduate Program Director, 1997 – 1999, 2007 - 2010

Chair, Physics Department Planning Committee, 1994 - 95

Member, Physics Department Planning Committee, 1993 - 96

Convener, Astronomy Quality Enhancement Circle 1992 - 1999

Chair, Physics Department Lab Manager Search Committee, 1993 -94

Coordinator for Instructional Services, 1994 - 97

Physics Department Honors Advisor, 1993 – 1999, 2009 -

Graduate Student recruiter, 1991

Editor of graduate student recruiting brochure, 1992

Co-organizer and presenter, Elementary Schools Astronomy Project, 1992 - 97

Frontiers of Science Lecturer, 1991 and 1994

Lecturer to Summer High School Science Academy, 1994

Lecturer to High School Science Teachers, 1992

Co-organizer, Adventures in Physics Day, 1991

Revised astronomy lab for ISDP, 1993

Informal mentor for several area high school students

Awards:

Physics Department Undergraduate Teaching Award, 2002

Syracuse University Scholar-Teacher of the Year, 2003

Fellow, American Physical Society, elected 2003

Fellow, International Society on General Relativity & Gravitation, elected 2013