

LI-XIN LI



Kavli Institute for Astronomy and Astrophysics, Peking University
5 Yiheyuan Road, Haidian District
Beijing 100871, P. R. China

Phone: +86-10-62753661 Fax: +86-10-62767900

Email: lxl@pku.edu.cn Website: <http://kavli.pku.edu.cn/~lxl>

Section I. Curriculum Vitae

CURRENT POSITION

Professor, Kavli Institute for Astronomy and Astrophysics/Department of Astronomy, Peking University, P. R. China

RESEARCH INTERESTS

- **High Energy Astrophysics:** black hole physics, accretion processes, merger of neutron stars, gamma-ray bursts, supernovae
- **Astrophysical Fluid Dynamics:** hydrodynamic and magnetohydrodynamic waves and instabilities, radiation hydrodynamics
- **Cosmology:** gravitational lensing, dark matter and dark energy, structure formation, background radiation, axion cosmology
- **General Relativity:** closed timelike curves and causality, classical and quantum fields in curved spacetime, numerical relativity and gravitational waves
- **Unified Theories:** extra-dimensions, Kaluza-Klein theory, brane gravity, string theory
- **Nuclear Astrophysics:** r-process and nucleosynthesis

EDUCATION HISTORY

- **Ph.D.**, Astrophysical Sciences, Princeton University, USA, 1997–2001
Thesis: *Extracting Energy from Black Holes: The Blandford-Znajek Mechanism and Related Problems*
Advisor: Bohdan Paczyński
- **M.Sc.**, Physics, Beijing Normal University, P. R. China, 1990–1993
Thesis: *Black Holes, Wormholes, and Time Machines*
Advisor: Liao Liu

- **B.Sc.**, Physics, Peking University, P. R. China, 1986–1990

Thesis: *The Squeezed State of Light and Its Application in Gravitational Wave Detection*

Advisor: Changqi Cao

EMPLOYMENT HISTORY

- Professor, Kavli Institute for Astronomy and Astrophysics/Department of Astronomy, Peking University, Beijing, P. R. China, 2008–Present
- Long-Term Postdoc Fellow, Max-Planck-Institut für Astrophysik, Garching, Germany, 2004–2008
- Chandra Fellow, Department of Astronomy, Harvard University, Cambridge, MA, USA, 2001–2004
- Lecturer, Department of Physics, Beijing Normal University, Beijing, P. R. China, 1993–1997

HONORS AND AWARDS

- Chandra Fellowship, Chandra X-Ray Observatory (sponsored by NASA), USA, 2001–2004
- Harold W. Dodds Fellowship, Princeton University, USA, 2000
- Merit Fellowship, Princeton University, USA, 1997
- Presidential Award, Beijing Normal University, P. R. China, 1995
- First Award, Chinese Society of Gravity and Relativistic Astrophysics, P. R. China, 1994
- Best Graduate Student Honor, Beijing Normal University, P. R. China, 1993

PROFESSIONAL SERVICES

- Supervisor Team Member, the GRID Project (for undergraduate students), Tsinghua University, P. R. China, 2018–Present
- Science Team Member, the XIPE Mission, ESA, 2015–Present
- Member, the Kavli Visitor Program, KIAA-PKU, P. R. China, 2014–Present
- Supervisor, Class for Weiming Physics Students, School of Physics at PKU, P. R. China, 2014–Present
- Science Team Member, the Einstein-Probe Project, NAOC, P. R. China, 2013–Present

- Science Team Member, the SVOM Project, NAOC, China-France, 2012–Present
- Member, the Faculty Search Committee, KIAA-PKU, P. R. China, 2014
- Associate Editor, Science China: Physics, Mechanics and Astronomy, Science China Press, P. R. China, 2013–2017
- Coordinator, the Visitor Program, KIAA-PKU, P. R. China, 2012–2013
- Member, the Postdoc Committee, KIAA-PKU, P. R. China, 2012–2013
- Science Panel Member, the Constellation-X Project, NASA, USA, 2007–2008

PROFESSIONAL AFFILIATIONS

- Member, American Astronomical Society, 2020–Present
- Member, American Physical Society, 2020–Present
- Member, International Society on General Relativity and Gravitation, 2016–Present
- Member, Chinese Physical Society, 2016–Present
- Member, Chinese Astronomical Society, 2011–Present
- Member, Beijing Astronomical Society, 2010–Present
- Member, International Astronomical Union, 2006–Present
- Member, American Astronomical Society, 2000–2004
- Member, American Physical Society, 1998–2004
- Member, Chinese Society of Gravity and Relativistic Astrophysics, 1993–Present

VISITING HISTORY

- Visiting Scholar, South-Western Institute For Astronomy Research, Yunnan University, Kunming, P. R. China, 2018.06
- Visiting Scientist, Max-Planck-Institut für Astrophysik, Garching, Germany, 2014.08
- Visitor, Department of Physics, Zhejiang University of Technology, Hangzhou, P. R. China, 2014.07
- Visiting Scholar, Center for Astrophysics at University of Science and Technology of China, Hefei, P. R. China, 2011.04
- Visiting Scientist, Max-Planck-Institut für Astrophysik, Garching, Germany, 2010.08
- Visiting Scientist, Max-Planck-Institut für Astrophysik, Garching, Germany, 2009.07–2009.08

- Visitor, Department of Physics, Imperial College London, London, UK, 2007.06
- Visitor, International Center for Relativistic Astrophysics, Rome, Italy, 2007.05
- Visitor, Perimeter Institute for Theoretical Physics, Waterloo, Canada, 2004
- Visitor, Department of Astronomy, Columbia University, New York, NY, USA, 2003
- Visitor, Institute for Advanced Study, Princeton, NJ, USA, 2002
- Visitor, Department of Physics and Astronomy, State University of New York at Stony Brook, Stony Brook, NY, USA, 1999
- Visiting Researcher, Institute of Theoretical Physics, Academia Sinica, Beijing, P. R. China, 1994–1995
- Visiting Scientist, International Center for Theoretical Physics, Trieste, Italy, 1994

EXPERIENCE IN SUPERVISING STUDENTS

Haoyu Wang (Under, Peking Univ., 2020-), Shaohua Xue (PhD, Peking Univ., 2020-), Jiayin Shen (PhD, Peking Univ., 2020-), Zihang Wang (PhD, Peking Univ., 2019-), Menghua Chen (PhD, Guangxi Univ., 2019-), Xunchuan Liu (PhD, Peking Univ., co-supervisor, 2016-), Huaiyu Li (Under, Peking Univ., 2015-2016), Yanjie Jing (Under, Peking Univ., 2015-2016), Hao Zhang (Under, Peking Univ., 2015-2016), Jiguang Lu (PhD, Peking Univ., co-supervisor, 2013-2017), Chunyu Li (PhD, Peking Univ., 2009-2014), Zhiyuan Ren (PhD, Peking Univ., co-supervisor, 2009-2013), Xiaolong Gong (PhD, Beijing Normal Univ., 2009-2012), Du Pei (Under, Peking Univ., 2010-2011), Shi Dai (Under, Peking Univ., 2010, co-supervisor), Xiaohong Cui (PhD, Peking Univ., 2009-2011, co-supervisor), Hong Qi (Master, National Astronomical Observatory, 2009), Maria Angela Campisi (PhD, Max-Planck-Institut für Astrophysik, Germany, 2006-2009), Erik R. Zimmerman (Under, Harvard University, USA, 2004)

EXPERIENCE IN TEACHING

Physics of Compact Stars, Gravitational Lensing, Topics in Modern Astronomy, Qualitative and Semi-Quantitative Physics, Quantum Fields in Curved Spacetime, Quantum Cosmology, General Physics, General Physics Lab

OTHER EXPERIENCE

- SOC Member, Second Meeting on Astrophysics of Gravitational Waves, Xiamen, P. R. China, 2018
- Mentor, High School Student Internship at KIAA (Sofie Ried, one week), Beijing, P. R. China, 2016

- SOC Member, 2015 Nanjing-Beijing Bilateral Astrophysics Workshop, Nanjing, P. R. China, 2015
- Coordinator, Conference on GRB Cosmology, KIAA-PKU, Beijing, P. R. China, 2014
- Coordinator, Multi-Messenger Transient Astrophysics, KIAA-PKU, Beijing, P. R. China, 2013
- Coordinator, Workshop on Fermi Data Analysis, KIAA-PKU, Beijing, P. R. China, 2012
- Coordinator, MHD and Energetic Particles in Laboratory, Space and Astrophysical Plasmas, KIAA-PKU, Beijing, P. R. China, 2012
- Coordinator, Conference on Dynamics of Astrophysical Disks, KIAA-PKU, Beijing, P. R. China, 2010
- Coordinator, Program on GRB Physics, KIAA-PKU, Beijing, P. R. China, 2009
- SOC Member, Conference on Compact Stars in the QCD Phase Diagram II (CSQCD II), KIAA-PKU, Beijing, P. R. China, 2009
- Software Development: Author of KERRBB for XSPEC X-Ray Data Analysis Package, Harvard University, Cambridge, MA, USA, 2004
- X-Ray Astronomy School, Berkeley Springs, WV, USA, 2002
- Michelson Interferometry Summer School, University of California at Berkeley, Berkeley, CA, USA, 2000

Section II. List of Publications

PUBLICATIONS IN REFEREED JOURNALS

1. Z. Jiang, J. Wang, F. Zhang, L.-X. Li, L. Wang, R. Li, L. Gao, Z. Han, and J. Pan 2020, “Simulating Kilonovae in the Λ CDM Universe”, *Monthly Notices of the Royal Astronomical Society*, **498**, 926–939; arXiv:2001.11299
2. Z. Wang, L. Shao, and L.-X. Li 2020, “Resonant Instability of Axionic Dark Matter Clumps”, *Journal of Cosmology and Astroparticle Physics*, issue 07, id 038, 26pp; arXiv:2002.09144
3. L.-X. Li 2019, “Line Expansion Opacity in Relativistically Expanding Media”, *The Astrophysical Journal*, **887**, id 60, 26pp; arXiv:1910.13619
4. L.-X. Li 2019, “Radioactive Gamma-Ray Emissions from Neutron Star Mergers”, *The Astrophysical Journal*, **872**, id. 19, 29pp; arXiv:1808.09833

5. J. Wen, X. Long, X. Zheng, Y. An, Z. Cai, J. Cang, Y. Che, C. Chen, L. Chen, Q. Chen, Z. Chen, Y. Cheng, L. Deng, W. Deng, W. Ding, H. Du, L. Duan, Q. Gan, T. Gao, Z. Gao, W. Han, Y. Han, X. He, X. He, L. Hou, F. Hu, J. Hu, B. Huang, D. Huang, X. Huang, S. Jia, Y. Jiang, Y. Jin, K. Li, S. Li, Y. Li, J. Liang, Y. Liang, W. Lin, C. Liu, G. Liu, M. Liu, R. Liu, T. Liu, W. Liu, D. Lu, P. Lu, Z. Lu, X. Luo, S. Ma, Y. Ma, X. Mao, Y. Mo, Q. Nie, S. Qu, X. Shan, G. Shi, W. Song, Z. Sun, X. Tan, S. Tang, M. Tao, B. Wang, Y. Wang, Z. Wang, Q. Wu, X. Wu, Y. Xia, H. Xiao, W. Xie, D. Xu, R. Xu, W. Xu, L. Yan, S. Yan, D. Yang, H. Yang, H. Yang, Y. Yang, Y. Yang, L. Yao, H. Yu, Y. Yu, A. Zhang, B. Zhang, L. Zhang, M. Zhang, S. Zhang, T. Zhang, Y. Zhang, Q. Zhao, R. Zhao, S. Zheng, X. Zhou, R. Zhu, Y. Zou, P. An, Y. Cai, H. Chen, Z. Dai, Y. Fan, C. Feng, H. Feng, H. Gao, L. Huang, M. Kang, L. Li, Z. Li, E. Liang, L. Lin, Q. Lin, C. Liu, H. Liu, X. Liu, Y. Liu, X. Lu, S. Mao, R. Shen, J. Shu, M. Su, H. Sun, P. Tam, C. Tang, Y. Tian, F. Wang, J. Wang, W. Wang, Z. Wang, J. Wu, X. Wu, S. Xiong, C. Xu, J. Yu, W. Yu, Y. Yu, M. Zeng, Z. Zeng, B. Zhang, B. Zhang, Z. Zhao, R. Zhou, and Z. Zhu 2019, “GRID: a Student Project to Monitor the Transient Gamma-Ray Sky in the Multi-Messenger Astronomy Era”, *Experimental Astronomy*, **48**, 77–95; arXiv:1907.06842
6. X.-C. Liu, Y. Wu, C. Zhang, T. Liu, J. Yuan, S.-L. Qin, B.-G. Ju, and L.-X. Li 2019, “ $\text{C}_2\text{H N} = 1 - 0$ and $\text{N}_2\text{H}^+ \text{ J} = 1 - 0$ Observations of Planck Galactic Cold Clumps”, *Astronomy & Astrophysics*, **622**, id. A32, 18pp; arXiv:1901.01124
7. L.-H. Shang, J.-G. Lu, Y.-J. Du, L.-F. Hao, D. Li, K.-J. Lee, B. Li, L.-X. Li, G.-J. Qiao, Z.-Q. Shen, D.-H. Wang, M. Wang, X.-J. Wu, Y.-J. Wu, R.-X. Xu, Y.-L. Yue, Z. Yan, Q.-J. Zhi, R.-B. Zhao, and R.-S. Zhao 2017, “Investigating the Multifrequency Pulse Profiles of PSRs B0329+54 and B1642-03 in an Inverse Compton Scattering Model”, *Monthly Notices of the Royal Astronomical Society*, **468**, 4389–4398; arXiv:1703.03582
8. L.-X. Li 2016, “Electromagnetic Force on a Brane”, *Classical and Quantum Gravity*, **33**, id. 225008, 10pp; arXiv:1609.09177
9. L.-X. Li 2016, “A New Unified Theory of Electromagnetic and Gravitational Interactions”, *Frontiers of Physics*, **11**, id. 110402, 32pp; arXiv:1511.01260
10. L.-X. Li 2016, “Electrodynamics on Cosmological Scales”, *General Relativity and Gravitation*, **48**, id. 28, 36pp; arXiv:1508.06910
11. J. Z. Ren, Y. F. Wu, T. Liu, L.-X. Li, D. Li, and B. G. Ju 2014, “A CO Observation of the Galactic Methanol Masers”, *Astronomy & Astrophysics*, **567**, id. A40, 31pp; arXiv:1404.7413
12. C.-Y. Li and L.-X. Li 2014, “Search for Strong Gravitational Lensing Effect in the Current GRB Data of BATSE”, *Science China-Physics, Mechanics & Astronomy*, **57**, 1592–1599; arXiv:1406.3102

13. C.-Y. Li and L.-X. Li 2014, “Constraining Fast Radio Burst Progenitors with Gravitational Lensing”, *Science China-Physics, Mechanics & Astronomy*, **57**, 1390–1394; arXiv:1403.7873
14. L.-X. Li 2013, “Photon Diffusion in a Relativistically Expanding Sphere”, *Frontiers of Physics*, **8**, 555–563
15. L.-X. Li 2012, “Accretion, Growth of Supermassive Black Holes, and Feedback in Galaxy Mergers”, *Monthly Notices of the Royal Astronomical Society*, **424**, 1461–1470; arXiv:1205.0363
16. X.-L. Gong and L.-X. Li 2012, “Jet Magnetically Accelerated from Disk-Corona around a Rotating Black Hole”, *Science China-Physics, Mechanics & Astronomy*, **55**, 880–887; arXiv:1204.3292
17. J. Z. Ren, Y. F. Wu, M. Zhu, T. Liu, R. S. Peng, S. L. Qin, and L.-X. Li 2012, “The Molecular Emissions and the Infall Motion in the High-Mass Young Stellar Object G8.68-0.37”, *Monthly Notices of the Royal Astronomical Society*, **422**, 1098–1108; arXiv:1203.2805
18. X.-L. Gong, L.-X. Li, and R.-Y. Ma 2012, “A Disc-Corona Model for a Rotating Black Hole”, *Monthly Notices of the Royal Astronomical Society*, **420**, 1415–1422; arXiv:1204.3289
19. S. Dai, L.-X. Li, and R.-X. Xu 2011, “The Plateau of Gamma-Ray Burst: Hint for the Solidification of Quark Matter?”, *Science China-Physics, Mechanics & Astronomy*, **54**, 1541–1545; arXiv:1008.2568
20. J. Z. Ren, T. Liu, Y. F. Wu, and L.-X. Li 2011, “Outflow Activities in the Young High-Mass Stellar Object G23.44-0.18”, *Monthly Notices of the Royal Astronomical Society*, **415**, L49–L53; arXiv:1107.1542
21. M. A. Campisi, L.-X. Li, and P. Jakobsson 2010, “Redshift Distribution and Luminosity Function of Long Gamma-ray Bursts from Cosmological Simulations”, *Monthly Notices of the Royal Astronomical Society*, **407**, 1972–1980; arXiv:1005.3700
22. M. A. Campisi, G. De Lucia, L.-X. Li, S. Mao, and X. Kang 2009, “Properties of Long Gamma-Ray Burst Host Galaxies in Cosmological Simulations”, *Monthly Notices of the Royal Astronomical Society*, **400**, 1613–1624; arXiv:0908.2427
23. L.-X. Li, R. Narayan, and J. E. McClintock 2009, “Inferring the Inclination of a Black Hole Accretion Disk from Observations of its Polarized Continuum Radiation”, *The Astrophysical Journal*, **691**, 847–865; arXiv:0809.0866
24. M. A. Campisi and L.-X. Li 2008, “Probability for Chance Coincidence of a Gamma-Ray Burst with a Galaxy on the Sky”, *Monthly Notices of the Royal Astronomical Society*, **391**, 935–941; arXiv:0809.0595

25. L.-X. Li 2008, “Star Formation History up to $z = 7.4$: Implications for Gamma-Ray Bursts and the Cosmic Metallicity Evolution”, *Monthly Notices of the Royal Astronomical Society*, **388**, 1487–1500; arXiv:0710.3587
26. L.-X. Li 2008, “The X-Ray Transient 080109 in NGC 2770: an X-Ray Flash Associated with a Normal Core-Collapse Supernova”, *Monthly Notices of the Royal Astronomical Society*, **388**, 603–610; arXiv:0803.0079
27. L.-X. Li 2008, “Are Gamma-Ray Bursts a Standard Energy Reservoir?”, *Acta Astronomica*, **58**, 103–112; arXiv:0806.2770
28. L.-X. Li 2007, “Gamma-Ray Burst Precursors as the Remnant of the Thermal Radiation Initially Trapped in the Fireball”, *Monthly Notices of the Royal Astronomical Society*, **380**, 621–636; arXiv:astro-ph/0703144
29. L.-X. Li 2007, “Variation of the Amati Relation with the Cosmological Redshift: a Selection Effect or an Evolution Effect?”, *Monthly Notices of the Royal Astronomical Society: Letters*, **379**, L55–L59; arXiv:0704.3128
30. L.-X. Li 2007, “Shock Breakout in Type Ibc Supernovae and Application to GRB 060218/SN 2006aj”, *Monthly Notices of the Royal Astronomical Society*, **375**, 240–256; arXiv:astro-ph/0605387
31. L.-X. Li 2007, “Redshift Degeneracy in the $E_{\text{iso}}-E_{\text{peak}}$ Relation of Gamma-Ray Bursts”, *Monthly Notices of the Royal Astronomical Society: Letters*, **374**, L20–L23; arXiv:astro-ph/0607366
32. J. E. McClintock, R. Shafee, R. Narayan, R. A. Remillard, S. W. Davis, and L.-X. Li 2006, “The Spin of the Near-Extreme Kerr Black Hole GRS 1915+105”, *The Astrophysical Journal*, **652**, 518–539; arXiv:astro-ph/0606076
33. L.-X. Li 2006, “Correlation between the Peak Spectral Energy of Gamma-Ray Bursts and the Peak Luminosity of the Underlying Supernovae: Implication for the Nature of GRB-SN Connection”, *Monthly Notices of the Royal Astronomical Society*, **372**, 1357–1365; arXiv:astro-ph/0608315
34. L.-X. Li and B. Paczyński 2006, “Improved Correlation between the Variability and Peak Luminosity of Gamma-Ray Bursts”, *Monthly Notices of the Royal Astronomical Society*, **366**, 219–226; arXiv:astro-ph/0509776
35. R. Shafee, J. E. McClintock, R. Narayan, S. W. Davis, L.-X. Li, and R. A. Remillard 2006, “Estimating the Spin of Stellar-Mass Black Holes via Spectral Fitting of the X-ray Continuum”, *The Astrophysical Journal Letters*, **636**, L113–L116; arXiv:astro-ph/0508302
36. L.-X. Li 2005, “Vacuum Polarization in an Anti-de Sitter Space as an Origin for a Cosmological Constant in a Brane World”, *Modern Physics Letters A*, **20**, 733–743; arXiv:astro-ph/0411583

37. L.-X. Li, E. Zimmerman, R. Narayan, and J. E. McClintock 2005, “Multi-Temperature Blackbody Spectrum of a Thin Accretion Disk around a Kerr Black Hole: Model Computations and Comparison with Observations”, *The Astrophysical Journal Supplement Series*, **157**, 335–370; arXiv:astro-ph/0411583
38. L.-X. Li 2004, “Energetics of Black Hole-Accretion Disk System with Magnetic Connection: Limit of Low Accretion Rate”, *Publications of the Astronomical Society of Japan*, **56**, 685–703; arXiv:astro-ph/0406353
39. L.-X. Li and R. Narayan 2004, “Quasi-Periodic Oscillations from Rayleigh-Taylor and Kelvin-Helmholtz Instability at a Disk-Magnetosphere Interface”, *The Astrophysical Journal*, **601**, 414–427; arXiv:astro-ph/0310081
40. I. V. Strateva, M. A. Strauss, L. Hao, D. J. Schlegel, P. B. Hall, J. E. Gunn, L.-X. Li, Ž. Ivezić, G. T. Richards, N. L. Zakamska, W. Voges, S. F. Anderson, R. H. Lupton, D. P. Schneider, J. Brinkmann, and R. C. Nichol 2003, “Double-Peaked Low-Ionization Emission Lines in Active Galactic Nuclei”, *Astronomical Journal*, **126**, 1720–1749; arXiv:astro-ph/0307357; Erratum: *Astronomical Journal*, **130**, 1961–1963
41. L.-X. Li and J. P. Ostriker 2003, “Gravitational Lensing by a Compound Population of Halos: Standard Models”, *The Astrophysical Journal*, **595**, 603–613; arXiv:astro-ph/0212310
42. L.-X. Li, J. Goodman, and R. Narayan 2003, “Non-Axisymmetric g -Mode and p -Mode Instability in a Hydrodynamic Thin Accretion Disk”, *The Astrophysical Journal*, **593**, 980–991; arXiv:astro-ph/0210455
43. L.-X. Li 2003, “Disk Accretion Flow Driven by Large-Scale Magnetic Fields: Solutions with Constant Specific Energy”, *Physical Review D*, **68**, id. 024022, 23pp; arXiv:astro-ph/0212503
44. L.-X. Li 2003, “Evolution of Magnetic Fields around a Kerr Black Hole”, *Physical Review D*, **67**, id. 044007, 18pp; arXiv:astro-ph/0212456
45. L.-X. Li, R. Narayan, and K. Menou 2002, “The Giant X-Ray Flare of NGC 5905: Tidal Disruption of a Star, a Brown Dwarf, or a Planet?”, *The Astrophysical Journal*, **576**, 753–761; arXiv:astro-ph/0203191
46. L.-X. Li 2002, “Observational Signatures of the Magnetic Connection between a Black Hole and a Disk”, *Astronomy & Astrophysics*, **392**, 469–472; arXiv:astro-ph/0112466
47. L.-X. Li 2002, “Toy Model for the Magnetic Connection between a Black Hole and a Disk”, *Physical Review D*, **65**, id. 084047, 9pp; arXiv:astro-ph/0202361
48. L.-X. Li 2002, “Accretion Disk Torqued by a Black Hole”, *The Astrophysical Journal*, **567**, 463–476; arXiv:astro-ph/0012469

49. L.-X. Li and J. P. Ostriker 2002, “Semi-Analytical Models for Lensing by Dark Halos: I. Splitting Angles”, *The Astrophysical Journal*, **566**, 652–666; arXiv:astro-ph/0010432
50. L.-X. Li 2002, “Jet Collimation by Small-Scale Magnetic Fields”, *The Astrophysical Journal*, **564**, 108–112; arXiv:astro-ph/0108469
51. L.-X. Li 2001, “Two Open Universes Connected by a Wormhole: Exact Solutions”, *Journal of Geometry and Physics*, **40**, 154–160; arXiv:hep-th/0102143
52. L.-X. Li 2000, “Making Clean Energy with a Kerr Black Hole: a Tokamak Model for Gamma-Ray Bursts”, *The Astrophysical Journal*, **544**, 375–380; arXiv:astro-ph/0005494
53. L.-X. Li 2000, “Extracting Energy from a Black Hole through the Transition Region”, *The Astrophysical Journal Letters*, **540**, L17–L20; arXiv:astro-ph/0007353
54. L.-X. Li and B. Paczyński 2000, “Extracting Energy from Accretion into a Kerr Black Hole”, *The Astrophysical Journal Letters*, **534**, L197–L198; arXiv:astro-ph/0003187
55. L.-X. Li 2000, “Extracting Energy from a Black Hole through Its Disk”, *The Astrophysical Journal Letters*, **533**, L115–L118; arXiv:astro-ph/0002004
56. L.-X. Li 2000, “Electromagnetic Energy for a Charged Kerr Black Hole in a Uniform Magnetic Field”, *Physical Review D*, **61**, id. 084033, 4pp; arXiv:astro-ph/0001494
57. L.-X. Li 2000, “Screw Instability and the Blandford-Znajek Mechanism”, *The Astrophysical Journal Letters*, **531**, L111–L114; arXiv:astro-ph/0001420
58. L.-X. Li 2000, “Toy Model for the Blandford-Znajek Mechanism”, *Physical Review D*, **61**, id. 084016, 7pp; arXiv:astro-ph/9902352
59. L.-X. Li 1999, “Time Machines Constructed from Anti-de Sitter Space”, *Physical Review D*, **59**, id. 084016, 15pp; arXiv:gr-qc/9901061
60. L.-X. Li and B. Paczyński 1998, “Transient Events from Neutron Star Mergers”, *The Astrophysical Journal Letters*, **507**, L59–L62; arXiv:astro-ph/9807272
61. L.-X. Li and J. R. Gott 1998, “Inflation in Kaluza-Klein Theory: Relation between the Fine-Structure Constant and the Cosmological Constant”, *Physical Review D*, **58**, id. 103513, 6pp; arXiv:astro-ph/9804311
62. J. R. Gott and L.-X. Li 1998, “Can the Universe Create Itself?”, *Physical Review D*, **58**, id. 023501, 43pp; arXiv:astro-ph/9712344
63. L.-X. Li and J. R. Gott 1998, “Self-Consistent Vacuum for Misner Space and the Chronology Protection Conjecture”, *Physical Review Letters*, **80**, 2980–2983; arXiv:gr-qc/9711074

64. L.-X. Li 1998, “Effect of the Global Rotation of the Universe on the Formation of Galaxies”, *General Relativity and Gravitation*, **30**, 497–507; arXiv:astro-ph/9703082
65. L.-X. Li 1997, “Thermodynamic Properties of Radiation near the Black-Hole Horizon”, *General Relativity and Gravitation*, **29**, 973–989
66. L.-X. Li 1996, “Must Time Machines Be Unstable against Vacuum Fluctuations?”, *Classical and Quantum Gravity*, **13**, 2563–2568; arXiv:gr-qc/9703024
67. L.-X. Li 1996, “Back-Reaction of Kerr Black Hole: a Thermodynamical Approach”, *General Relativity and Gravitation*, **28**, 1171–1175
68. L. Liu, F. Zhao, and L.-X. Li 1995, “Can Vacuum Foam Structure Solve the Flatness Problem of a Big Bang Universe?”, *Physical Review D*, **52**, 4752–4753
69. L.-X. Li 1995, “Summation over Steepest-Descent Contours in Path Integral Approach to Quantum Cosmology”, *Chinese Physics Letters*, **12**, 257–260
70. L.-X. Li 1994, “New Light on Time Machines: Against the Chronology Protection Conjecture”, *Physical Review D*, **50**, R6037–R6040
71. J. -M. Xu, L.-X. Li, and L. Liu 1994, “Instability of Anti-de Sitter Spacetime”, *Physical Review D*, **50**, 4886–4889
72. L.-X. Li, J. -M. Xu, and L. Liu 1993, “Complex Geometry, Quantum Tunneling, and Time Machines”, *Physical Review D*, **48**, 4735–4737
73. L.-X. Li, Y. Wang, Z. Zhao, and L. Liu 1993, “A Possible Energetic Mechanism for the Galactic Jet: the Hawking Radiation of the Spacetime of Two Black Holes”, *Journal of Beijing Normal University (Natural Science)*, **29**, 343–348
74. L.-X. Li and L. Liu 1992, “Properties of Radiation near the Black Hole Horizon and the Second Law of Thermodynamics”, *Physical Review D*, **46**, 3296–3301
75. L.-X. Li and L. Liu 1992, “Bianchi I Cosmological Models with Torsion”, *Journal of Beijing Normal University (Natural Science)*, **28**, 341–346

PUBLICATIONS IN PROCEEDINGS

1. L. Gou, Y. Dong, Z. Wang, X. Li, J. Liu, B. Liu, F. Yuan, S. Zhang, S. Yan, L. Li, Y. Yuan, & W. Gu 2018, “The X-Ray Binary System in the EP Era”, *SCIENTIA SINICA Physica, Mechanica & Astronomica*, **48** (Special Issue on Einstein Probe), id. 039509, 7pp
2. B. Li, H. Sun, L. Wang, J. Wei, Y. Huang, L. Li, Z. Li, E. Liang, & X. Wu 2018, “Special Gamma-ray Bursts and Special Radiation Components from Gamma-Ray Bursts”, *SCIENTIA SINICA Physica, Mechanica & Astronomica*, **48** (Special Issue on Einstein Probe), id. 039507, 11pp

3. Z. Liu, W. Yuan, H. Sun, S. Li, F. Liu, X. Chen, Y. Lu, T. Wang, W. Lei, S. Zhong, F. Yuan, J. Wang, Z. Li, L. Li, Y. Fan, & H. Zhou 2018, “Massive Black Holes and Tidal Disruption Events at the Center of Galaxies”, *SCIENTIA SINICA Physica, Mechanica & Astronomica*, **48** (Special Issue on Einstein Probe), id. 039503, 13pp
4. J. Wei, B. Cordier, S. Antier, P. Antilogus, J.-L. Atteia, A. Bajat, S. Basa, V. Beckmann, M.G. Bernardini, S. Boissier, L. Bouchet, V. Burwitz, A. Claret, Z.-G. Dai, F. Daigne, J. Deng, D. Dornic, H. Feng, T. Foglizzo, H. Gao, N. Gehrels, O. Godet, A. Goldwurm, F. Gonzalez, L. Gosset, D. Götz, C. Gouiffes, F. Grise, A. Gros, J. Guilet, X. Han, M. Huang, Y.-F. Huang, M. Jouret, A. Klotz, O. La Marle, C. Lachaud, E. Le Floch, W. Lee, N. Leroy, L.-X. Li, S. C. Li, Z. Li, E.-W. Liang, H. Lyu, K. Mercier, G. Migliori, R. Mochkovitch, P. O’Brien, J. Osborne, J. Paul, E. Perinati, P. Petitjean, F. Piron, Y. Qiu, A. Rau, J. Rodriguez, S. Schanne, N. Tanvir, E. Vangioni, S. Vergani, F.-Y. Wang, J. Wang, X.-G. Wang, X.-Y. Wang, A. Watson, N. Webb, J. J. Wei, R. Willingale, C. Wu, X.-F. Wu, L.-P. Xin, D. Xu, S. Yu, W.-F. Yu, Y.-W. Yu, B. Zhang, S.-N. Zhang, Y. Zhang, and X.L. Zhou 2016, “The Deep and Transient Universe in the SVOM Era: New Challenges and Opportunities - Scientific Prospects of the SVOM Mission”, in *Proceedings of the Workshop held from 11th to 15th April 2016 at Les Houches School of Physics, France*; eprint arXiv:1610.06892
5. L.-X. Li 2016, “An Introduction to B. P. Schmidt’s Lecture on the Accelerating Universe: A Nobel Prize Millennium in the Making”, in *Action and Thought on Scientific Roads: Nobel Laureate’s Lectures at Peking University* (Beijing, Peking University Press), P. 157
6. J. R. Gott and L.-X. Li 2013, “Self-Creating Universe with a Time Loop at the Beginning”, in *Beyond the Big Bang: Competing Scenarios for an Eternal Universe*, ed. R. Vaas (Berlin, Springer), p. 471
7. L.-X. Li 2010, “GRBs and Supernovae: Two faces of One Thing”, in *10000 Selected Problems in Sciences: Astronomy* (Beijing, Press of Sciences), P. 773
8. E.-W. Liang, Z.-G. Dai, and L.-X. Li 2010, “GRB Cosmology”, in *10000 Selected Problems in Sciences: Astronomy* (Beijing, Press of Sciences), P. 714
9. L.-X. Li 2008, “The GRB-Supernova Connection”, in *2008 Nanjing Gamma-Ray Burst Conference* (New York, AIP), P. 273; arXiv:0808.1184
10. L.-X. Li 2007, “Are Gamma-Ray Bursts Standard Candles?”, in *Proceedings of “070228: The Next Decade of GRB afterglows”*, Amsterdam, 19-23 March 2007; eprint arXiv:0705.4401
11. L.-X. Li 2004, “Disk Accretion Driven by Magnetic Fields: Implication for New Models”, in *Focus on Astrophysics Research* (Nova Science, New York), P. 201
12. I. Strateva, M. Strauss, L. Hao, D. Schlegel, P. Hall, J. Gunn, L.-X. Li, Ž. Ivezić, G. Richards, N. Zakamska, W. Voges, S. Anderson, R. Lupton, D. Schneider, J.

- Brinkmann, and R. Nichol 2004, “A Large Sample of Double-peaked H_α Lines and AGN Accretion Disks”, in *AGN Physics with the Sloan Digital Sky Survey* (San Francisco, ASP), P. 189
13. L.-X. Li, R. Narayan, and K. Menou 2002, “The Giant X-Ray Flare of NGC 5905: Tidal Disruption of a Star, a Brown Dwarf, or a Planet?”, in *American Astronomical Society Meeting 201*, #54.03
 14. K. -I. Nishikawa, G. Richardson, R. Preece, G. J. Fishman, S. Koide, K. Shibata, T. Kudoh, H. Sol, L.-X. Li, J. P. Hughes, P. Hardee, and R. Blandford 2002, “3-D General Relativistic MHD Simulations of Generating Jets”, in *Active Galactic Nuclei: from Central Engine to Host Galaxy* (Meudon, France), P. 353
 15. L.-X. Li 2001, “A Tokamak Model for Gamma-Ray Bursts”, in *American Astronomical Society Meeting 199*, #161.22
 16. L.-X. Li 2001, “Magnetic Connection between a Black Hole and a Disk”, in *X-Ray Emission from Accretion onto Black Holes* (Johns Hopkins University)

Section III. List of Lectures and Talks

1. “Transient Events from Neutron Star Mergers: Theory and Observation”
L.-X. Li 2020, Lecture, Course of “Frontiers of Astrophysics” in Peking University, Beijing, P. R. China
2. “GRB Cosmology”
L.-X. Li 2018, Invited Talk, Closing Meeting of the 973 Project on Gamma-Ray Bursts and Relevant Physics, Nanjing, P. R. China
3. “Transient Events from Neutron Star Mergers: Theory and Observation”
L.-X. Li 2018, Invited Talk, South-Western Institute For Astronomy Research, Yunnan University, Kunming, P. R. China
4. “Gravitational Waves and Their Electromagnetic Counterparts”
L.-X. Li 2018, Lecture, Course of “Frontiers of Astrophysics” in Peking University, Beijing, P. R. China
5. “Electrodynamics, Cosmology, and the New Unified Theory”
L.-X. Li 2018, Invited Talk, Workshop on Gravitation and Relativity, Beijing Normal University, Beijing, P. R. China
6. “Kilonovae from Neutron Star Mergers”
L.-X. Li 2017, Invited Talk, The First Workshop on Multi-Band Photometric Sky Survey Telescope, Kunming, P. R. China

7. “Gravitational Waves and Their Electromagnetic Counterparts”
L.-X. Li 2017, Invited Talk, The Fourth Workshop on Theoretical Physics, Institute of Theoretical Physics at Peking University, Beijing, P. R. China
8. “Kilonovae from Neutron Star Mergers”
L.-X. Li 2017, Invited Talk, Morningside-PKU-Silk Road Seminar in Gravitational Wave Astronomy, Beijing, P. R. China
9. “Kilonovae from Neutron Star Mergers”
L.-X. Li 2017, Invited Talk, Observation and Study on Astronomical Phenomena Related to Transient Events, Wuhan, P. R. China
10. “Kilonovae from Neutron Star Mergers”
L.-X. Li 2017, Invited Talk, The First Meeting on Astrophysics of Gravitational Waves, Beijing, P. R. China
11. “A New Unified Theory of Electromagnetic and Gravitational Interactions”
L.-X. Li 2016, Invited Talk, Institute of High Energy Physics, Chinese Academy of Sciences, Beijing, P. R. China
12. “Electrodynamics, Cosmology, and Unification”
L.-X. Li 2015, Invited Talk, Workshop on Gamma-Ray Bursts and Einstein’s Relativity, Beijing Normal University, Beijing, P. R. China
13. “Test of GR Effects: Polarized Radiation from Accretion onto Black Holes”
L.-X. Li 2015, Invited Talk, International Workshop on eXTP, Institute for High Energy Physics, Beijing, P. R. China
14. “Super-Eddington Accretion and the Growth of Supermassive Black Holes in High- z Quasars”
L.-X. Li 2013, Invited Talk, Closing Meeting of the 973 Project on the First Light of the Universe, Beijing, P. R. China
15. “GRB Precursors”
L.-X. Li 2013, Invited Talk, Einstein-Probe Working Group Meeting, Beijing, P. R. China
16. “Transient Events from Neutron Star Mergers”
L.-X. Li 2013, Invited Talk, Einstein-Probe Scientific Targets Meeting, Beijing, P. R. China
17. “Transient Events from Neutron Star Mergers”
L.-X. Li 2013, Invited Talk, Workshop on Collapsing Objects, Shanghai, P. R. China
18. “Super-Eddington Accretion and the Growth of Supermassive Black Holes in High- z Quasars”
L.-X. Li 2012, Invited Talk, 973 Meeting on the First Light in the Universe, Lijiang, P. R. China

19. “Super-Eddington Accretion and the Growth of Supermassive Black Holes in High- z Quasars”
L.-X. Li 2012, Invited Talk, 973 Meeting on Black Hole and Compact Objects Physics, Beihai, P. R. China
20. “Super-Eddington Accretion and the Growth of Supermassive Black Holes in High- z Quasars”
L.-X. Li 2012, Invited Talk, SHAO Astrophysics Symposium 2012, Shanghai, P. R. China
21. “Polarized Continuum Radiation of Accretion Disks: toward Ultimate Determination of the Black Hole Spin”
L.-X. Li 2011, Invited Talk, Mini-Workshop on Polarimetry in X/Gamma-Ray Astronomy, Tsinghua University, Beijing, P. R. China
22. “Transient Events for the LSST”
L.-X. Li 2011, Invited Talk, LSST and Opportunities of PKU Astrophysics (PKU Astrophysics Colloquium 2011), Beijing, P. R. China
23. “Polarized Continuum Radiation of Accretion Disks: toward Ultimate Determination of the Black Hole Spin”
L.-X. Li 2011, Invited Talk, University of Science and Technolowdge of China, Hefei, P. R. China
24. “GRBs and Their Host Galaxies”
L.-X. Li 2010, Invited Talk, PKU Astrophysics Colloquium 2010, Beijing, P. R. China
25. “The GRB-Supernova Connection”
L.-X. Li 2010, Invited Talk, 3rd Sino-German Frontiers of Science Symposium, Qingdao, P. R. China
26. “GRB Cosmology”
L.-X. Li 2009, Invited Talk, 973 Conference on the First Light of the Universe, Korla, P. R. China
27. “Gravitational Lensing”
L.-X. Li 2009, Lecture, Course of “Frontiers of Astrophysics” in Peking University, Beijing, P. R. China
28. “GRBs and Cosmology”
L.-X. Li 2009, Lecture, Course of “Frontiers of Astrophysics” in Peking University, Beijing, P. R. China
29. “Star Formation at High z : Implications for GRBs and the Cosmic Metallicity Evolution”
L.-X. Li 2008, Invited Talk, KIAA-PKU Workshop on Cosmic Reionization, Beijing, P. R. China

30. “The GRB-Supernova Connection”
L.-X. Li 2008, Invited Talk, Frontiers of Astronomy and Astrophysics—an Opening Symposium of the KIAA-PKU, Beijing, P. R. China
31. “The GRB-Supernova Connection”
L.-X. Li 2008, Invited Talk, 2008 Nanjing GRB Conference, Nanjing, P. R. China
32. “The X-Ray Transient 080109 in NGC 2770: an X-Ray Flash Associated with a Normal Core-Collapse Supernova”
L.-X. Li 2008, High Energy Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
33. “Gamma-Ray Bursts and Supernovae: Two Faces of the Same Guy?”
L.-X. Li 2008, Invited Talk, CNRS, Paris, France
34. “Probing the Cosmic Metallicity Evolution with Gamma-Ray Bursts”
L.-X. Li 2007, Invited Talk, Black Hole Cluster Meeting, Max-Planck-Institut für Extraterrestrische Physik, Garching, Germany
35. “Gamma-Ray Bursts and Supernovae: Two Faces of the Same Guy?”
L.-X. Li 2007, Invited Talk, Imperial College London, London, UK
36. “Gamma-Ray Bursts and Supernovae: Two Faces of the Same Guy?”
L.-X. Li 2007, Invited Talk, University of Bristol, Bristol, UK
37. “Gamma-Ray Burst Precursors as the Remnant of the Thermal Radiation Initially Trapped in the Fireball”
L.-X. Li 2007, Invited Talk, La Sapienza Università di Roma, Italy
38. “On the Gamma-Ray Burst and Supernova Connection”
L.-X. Li 2007, Workshop on “Short Gamma-Ray Bursts”, Ringberg Castle, Munich, Germany
39. “Are Gamma-Ray Bursts Standard Candles?”
L.-X. Li 2007, Invited Debate Talk, 070228: The Next Decade of GRB Afterglows, Amsterdam, Netherlands
40. “Shock Breakout in type Ibc Supernovae and Application to GRB 060218/SN 2006aj”
L.-X. Li 2007, Invited Talk, National Astronomical Observatories, Chinese Academy of Sciences, Beijing, P. R. China
41. “Shock Breakout in type Ibc Supernovae and Application to GRB 060218/SN 2006aj”
L.-X. Li 2006, Institute Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany

42. “Growth of Black Holes by Super-Eddington Accretion during Galaxy Merger”
L.-X. Li 2006, the 7th Sino-German Workshop on “Galaxies, Super-massive Black Holes and the Cosmic Web”, Shanghai Astronomical Observatory, Shanghai, P. R. China
43. “Improved Correlation between the Variability and Peak Luminosity of Gamma-Ray Bursts”
L.-X. Li 2005, High Energy Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
44. “Effects of Vacuum Polarization in a Universe with Extra Dimensions”
L.-X. Li 2005, Cosmology Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
45. “Probing Cosmology with Strong Lensing: Semi-Analytical Models”
L.-X. Li 2005, Lensing Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
46. “Magnetic Interaction between a Black Hole and an Accretion Disk and Its Observational Signatures”
L.-X. Li 2004, Institute Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
47. “Multi-Temperature Blackbody Spectrum of a Thin Accretion Disk around a Kerr Black Hole: Model Computations and Comparison with Observations”
L.-X. Li 2004, High Energy Seminar, Max-Planck-Institut für Astrophysik, Garching, Germany
48. “Magnetic Interaction between a Black Hole and an Accretion Disk and Its Observational Signatures”
L.-X. Li 2004, Invited Talk, University of Waterloo, Waterloo, Ontario, Canada
49. “Effects of Vacuum Polarization in a Universe with Extra Dimensions”
L.-X. Li 2004, Invited Talk, Perimeter Institute for Theoretical Physics, Waterloo, Ontario, Canada
50. “Magnetic Interaction between a Black Hole and an Accretion Disk and Its Observational Signatures”
L.-X. Li 2004, Invited Talk, McGill University, Montreal, Quebec, Canada
51. “Magnetic Interaction between a Black Hole and an Accretion Disk and Its Observational Signatures”
L.-X. Li 2003, Invited Talk, Columbia University, New York, NY, USA
52. “Instability in Accretion Disks and Quasi-Periodic Oscillations in X-Ray Binaries”
L.-X. Li 2003, Chandra Fellows Symposium, Smithsonian Astrophysical Observatory, Cambridge, MA, USA

53. “Disk Accretion Flow Driven by Magnetic Fields: Solutions with Constant Specific Energy”
L.-X. Li 2003, Theoretical Astrophysics Division Seminar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA
54. “The Giant X-Ray Flare of NGC 5905: Tidal Disruption of a Star, a Brown Dwarf, or a Planet?”
L.-X. Li 2002, Chandra Fellows Symposium, Smithsonian Astrophysical Observatory, Cambridge, MA, USA
55. “Giant X-Ray Flares from Tidal Disruption of a Star by a Supermassive Black Hole”
L.-X. Li 2002, Tuesday Lunch, Institute for Advanced Study, Princeton, NJ, USA
56. “Disk Powered by a Black Hole through Magnetic Connection”
L.-X. Li 2001, Chandra Fellows Symposium, Smithsonian Astrophysical Observatory, Cambridge, MA, USA
57. “Extracting Energy from Black Holes: The Blandford-Znajek Mechanism and Related Problems”
L.-X. Li 2001, Astronomy Colloquium, Princeton University, Princeton, NJ, USA
58. “Topics on the Blandford-Znajek Mechanism”
L.-X. Li 1999, Invited Talk, the State University of New York at Stony Brook, Stony Brook, NY, USA
59. “Time Machines and Chronology Protection Conjecture”
L.-X. Li 1995, Invited Lecturer, Spring School on Quantum Gravity, CCAST (World Laboratory), Beijing, P. R. China
60. “On the Chronology Protection Conjecture”
L.-X. Li 1994, International Conference on Gravity and Relativistic Astrophysics, Shanghai, P. R. China
61. “Time Machines with Complex Geometry”
L.-X. Li 1993, Annual National Conference on Gravity and Relativistic Astrophysics, Ganshu, P. R. China