

CURRICULUM VITAE

Abraham Loeb

Field of Research: Theoretical Astrophysics and Cosmology

Family: Married to Ofrit Liviatan and father to Klil and Lotem

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Academic Degrees

1986 Ph.D. in Physics

1985 M.Sc. in Physics

1983 B.Sc. in Physics and Mathematics

The Hebrew University of Jerusalem, Israel

Thesis Topic

Ph.D. “Particle Acceleration to High Energies and Amplification of Coherent Radiation by Electromagnetic Interactions in Plasmas”

M.Sc. “Analytical Models for the Evolution of Strong Shock Waves Generated by High Irradiance Lasers in Solids and Fast Spark Discharges”

Positions Held

2007– Director of the *Institute for Theory and Computation (ITC)*,

Harvard University (<http://www.cfa.harvard.edu/itc/>).

1997– Professor of Astronomy, Harvard University.

1995–1996 Associate Professor, Astronomy Dept., Harvard University.

1993–1995 Assistant Professor, Astronomy Dept., Harvard University.

1988–1993 Long-term member, The Institute for Advanced Study, Princeton.

1985–1988 Head of a theoretical group on electromagnetic propulsion at Soreq NRC, Israel.

1980–1988 Participant in “Talpiyot project,” Israel. This national project selects 25 high-school graduates every year from all around Israel; the participants attend an advanced program of academic study and research.

Honors

2009 Director of the Jerusalem Winter School in Theoretical Physics

2009 Distinguished Visiting Scientist at the Carnegie Observatories, Pasadena

2008 Invited speaker at the annual symposium of the Miller Institute, UC Berkeley

2008 Cover story of Smithsonian magazine about black holes, and cover story of ASTRONOMY magazine about the future collision between the Milky-Way and Andromeda

2007 Inaugural Australian Institute of Physics (AIP) End of Year Lecturer

2007 Paper on *Milkomeda* (arXiv:0705.1170) was selected as one of the top 10 space stories by ASTRONOMY magazine

2007/8 Australia-Harvard Distinguished Fellow

2007 Merle Kingsley Distinguished Visitor at the California Institute of Technology (Caltech)

2006/7 John Bahcall Lecturer at Tel Aviv University University

2006 Salpeter Lecturer at Cornell University

2006 SAAS-Fee Lecturer on “The First Light”. Ten lectures summarized in a review of 158 pages, appeared in a book format (astro-ph/0603360).

2006 Robert J. Trumpler Award of the *Astronomical Society of the Pacific* for the PhD thesis of Steven Furlanetto

2004- Visiting Professorship at the Faculty of Physics and the Einstein Center for Theoretical Physics, Weizmann Institute of Science

2003 Einstein Minerva fellow, Physics Faculty, Weizmann Institute

2001 Prof. Dror Sadeh Memorial Lecturer at Tel Aviv University University

- 2002** John Simon Guggenheim Memorial Foundation Fellow
- 1999** Bergmann Memorial Award of the US-Israel Binational Science Foundation
- 1996** Hoopes Prize for excellence in undergraduate education
- 1987** The Kennedy Prize, Hebrew University of Jerusalem
- 1985** “Best M.Sc. Student” award of the Faculty of Science of the Hebrew University of Jerusalem (summa cum laude)
- 1980** Participant in the national elite project “Talpiyot”, Israel

Public Service

- 1997–2000** Science Working Group for the *Next Generation Space Telescope*
- 1998–** Science Working Group for the *Generation-X Space Telescope*
- 1999–2000** Panel on Ultraviolet, Optical, and Infrared Astronomy from Space of the Astronomy and Astrophysics Survey Committee
- 2000–2010** Chair of the biennial *Harvard-Smithsonian Conference Series in Theoretical Astrophysics*, sponsored by Raymond and Beverly Sackler. The first conference on “The First Generation of Cosmic Structures” was held in May 2000 (<http://cfa-www.harvard.edu/apconf/>). The second conference on “Gamma-Ray Bursts: The Brightest Explosions in the Universe” was held in May 2002 (<http://cfa-www.harvard.edu/grbconf/>). The third conference on “Astrophysics of Planetary Systems” was held in May 2004 (<http://cfa-www.harvard.edu/apsconf/>). The fourth conference on “Nuclear Black Holes in Galaxies” was held in May 2006 (<http://cfa-www.harvard.edu/bh2006/>). The fifth conference on “21cm Cosmology” was held in May 2008 (<http://www.cfa.harvard.edu/events/2008/cos2008/>).
- 2005–** Science Working Group for the *Cosmic Inflation Probe*
- 2005–** Science Working Group for the *Murchison Wide-Field Array*
- 2008–** Executive board for the *Energetic X-ray Imaging Survey Telescope*
- 2008–** Science Working Group for the *JANUS GRB Mission*
- 2008–** Science Working Group for the *Lunar Radio Observatory*
- 2008/9** Chair, selection committee of the Dan David Prize in cosmology
- 2009–** Editor, *Journal of Cosmology and Astroparticle Physics (JCAP)*

Graduate Students (in chronological order)

Daniel Eisenstein (Hubble fellow, Professor at Univ. of Arizona), Zoltán Haiman (Hubble fellow, Professor at Columbia Univ.), Rosalba Perna (Harvard Junior fellow, Princeton Spitzer fellow, Assistant Professor at U. Colorado), Eric Woods (graduated, teaching), Ravi Pilla (graduated), Alexandre Refregier (Sacklay, France), David Heyrovsky (graduated), Xiaohu Wang (graduated, investment banking), Pinaki Chatterjee (graduated, investment banking), Steven Furlanetto (prize postdoctoral fellowship at Caltech, Professor at UCLA, received the *Trumpler award* in 2006 for his PhD thesis), Loren Hoffman (Lindheimer postdoctoral fellow, Northwestern), Daniel Babich (prize postdoctoral fellowship, Caltech), Ryan O’Leary (Astronomy), Joseph Munoz (Astronomy), Bence Kocsis (ITC postdoc), Laura Blecha (Astronomy), Ben Maruca (Astronomy), Idan Ginsburg (Dartmouth), Eli Visbal (Physics), Genevieve Shattow (Chandra), Nicholas Stone (Astronomy), Douglas Rubin (Physics), Jonathan Bittner (Physics) .

Personal postdoctoral fellows (in chronological order)

Anne Thoul (Prof. at Univ. of Liege, Belgium), Volker Bromm (Prof. at Univ. of Texas), Stuart Wyithe (Prof. at Univ. of Melbourne), Dan Fabrycky (NSF fellow), Mark Dijkstra (ITC fellow), Jonathan Pritchard (Hubble fellow), Uri Keshet (GLAST fellow), Yuval Birnboim (Rothschild fellow).

Abraham Loeb - LIST OF PUBLICATIONS

Books

1. Loeb, A. “*How Did the First Stars and Galaxies Form?*”, Princeton University Press, Frontiers in Physics Series, undergraduate level (to appear in Spring 2010).
2. Loeb, A., & Furlanetto, S., “*The First Galaxies*”, Princeton University Press, in preparation, graduate level textbook (to appear in Spring 2012).
3. Loeb, A., Ferrara, A., & Ellis, R. S. “*First Light in the Universe*”, SAAS-Fee winter school, Springer, New York (2008).

Papers

1. Fish, V., Doeleman, S., Broderick, A. , Loeb, A., & Rogers, A. “Detecting Changing Polarization Structures in Sagittarius A* with High Frequency VLBI”, ApJ, in press (2009). [arXiv:0910.3893]
2. Loeb, A. “Electromagnetic Signature of Galactic Black Hole Binaries That Enter Their Gravitational-Wave Induced Inspiral”, Phys. Rev. Lett., submitted (2009). [arXiv:0909.0261]
3. Pritchard, J., Loeb, A., & Wyithe, J. “Constraining Reionization Using 21-cm Observations in Combination with CMB and Lyman-alpha Forest Data”, MNRAS, submitted, 2009. [arXiv:0908.3891]
4. Moro-Martin, A., Turner, E. L., & Loeb, A. “Will LSST Detect Extra-Solar Planetesimals Entering the Solar System?”, ApJ, **704**, 733, 2009. [arXiv:0908.3948]
5. Broderick, A., & Loeb, A. “Signatures of Relativistic Helical Motion in the Rotation Measures of AGN Jets”, ApJ, **703**, L104, 2009. [arXiv:0908.2999]

6. Barkana, R., & Loeb, A. “Concentrating the Dark Matter in Galaxy Clusters through Tidal Stripping of Baryonically-Compressed Galactic Halos”, MNRAS, submitted, 2009. [arXiv:0907.1102]
7. Cen, R., McDonald, P., Trac, H., & Loeb, A. “Probing the Epoch of Reionization with the Lyman Alpha Forest at $z \sim 4-5$ ”, ApJ, **706**, L164, 2009.
8. Doeleman, S. et al. “Imaging an Event Horizon: submm-VLBI of a Super-Massive Black Hole”, 2009. [arXiv:0906.3899]
9. Munoz, J. A., Trac, H., & Loeb, A. “Galaxy Statistics in Pencil-beam Surveys at High Redshifts”, MNRAS, submitted, 2009. [arXiv:0906.2782]
10. Munoz, J. A., Madau, P., Loeb, A., & Diemand, J. “Probing the Epoch of Reionization with Milky-Way Satellites”, MNRAS, in press, 2009. [arXiv:0905.4744]
11. Bagla, J.S., & Loeb, A. “The Hyperfine Transition of $^3\text{He}+$ as a Probe of the Intergalactic Medium”, MNRAS, submitted, 2009. [arXiv:0905.1698]
12. Faucher-Giguere, C.-A., & Loeb, A. “The Pulsar Contribution to the Gamma-Ray Background”, MNRAS, submitted, 2009. [arXiv:0904.3102]
13. Birnboim, Y., & Loeb, A. “The Kinetic Sunyaev-Zel’dovich effect of the Milky Way Halo“, JCAP, **6**, 008, 2009. [arXiv:0903.3943]
14. Broderick, A., Loeb, A., & Narayan, R. “The Event Horizon Around SgrA*“, ApJ, **701**, 2, 2009. [arXiv:0903.1105]
15. Dijkstra, M., & Loeb, A., “Upper Limit on Dimming of Cosmological Sources by Intergalactic Grey Dust Based on the Soft X-ray Background”, MNRAS, **397**, 4, 2009. [arXiv:0902.4703]
16. Dijkstra, M., & Loeb, A., “Lyman Alpha ‘Blobs’ as an Observable Signature of Cold Accretion Streams into Galaxies”, MNRAS, in press, 2009. [arXiv:0902.2999]
17. Ghez, A., et al., “The Galactic Center: A Laboratory for Fundamental Astrophysics and Galactic Nuclei”, 2009. [arXiv:0903.0383]

18. Madau, P. , et al., “Massive Black Holes Across Cosmic Time”, 2009. [arXiv:0903.0097]
19. Cooke, J., et al., “First Light Sources at the End of the Dark Ages: Direct Observations of Population III Stars, Proto-Galaxies, and Supernovae During the Reionization Epoch, 2009. [arXiv:0902.4602]
20. Soderberg, A., et al., “The Dynamic X-ray Sky of the Local Universe”, 2009. [arXiv:0902.3674]
21. McQuinn, M., et al., “In Situ Probes of the First Galaxies and Reionization: Gamma-ray Bursts”, 2009. [arXiv:0902.3442]
22. Furlanetto, S., et al., “Cosmology from the Highly-Redshifted 21 cm Line”, 2009. [arXiv:0902.3259]
23. Moustakas, L. A., et al., “Strong gravitational lensing probes of the particle nature of dark matter”, 2009. [arXiv:0902.3219]
24. Peterson, J. B., et al., “21 cm Intensity Mapping”, 2009. [arXiv:0902.3091]
25. Furlanetto, S., et al., “Astrophysics from the Highly-Redshifted 21 cm Line”, 2009. [arXiv:0902.3011]
26. Cooray, A., et al., “A New Era in Extragalactic Background Light Measurements: The Cosmic History of Accretion, Nucleosynthesis and Reionization”, 2009. [arXiv:0902.2372]
27. Bloom, J., et al. “Coordinated Science in the Gravitational and Electromagnetic Skies”, 2009. [arXiv:0902.1527]
28. Broderick, A., & Loeb, A., “Imaging the Black Hole Silhouette of M87: Implications for Jet Formation and Black Hole Spin”, *ApJ*, **697**, 2, 2009. [arXiv:0812.0366]
29. Visbal, E., Loeb, A., & Wyithe, J. S. W., “Cosmological Constraints from 21cm Surveys After Reionization”, *MNRAS*, submitted, 2008. [arXiv:0812.0419]
30. Loeb, A., “The Race Between Stars and Quasars in Reionizing Cosmic Hydrogen”, *JCAP*, **3**, 22, 2009. [arXiv:0811.2222]

31. Wyithe, J. S. B., & Loeb, A., “Evidence for Merger-Driven Activity in the Clustering of High Redshift Quasars”, MNRAS, in press, 2008. [arXiv:0810.3455]
32. Broderick, A., Fish, V. L., Doeleman, S. S., & Loeb, A., “Estimating the Parameters of Sgr A*’s Accretion Flow Via Millimeter VLBI”, ApJ, **697**, 1, 2009. [arXiv:0809.4490]
33. Fish, V. L., Broderick, A., Doeleman, S. S., & Loeb, A., “ Using Millimeter VLBI to Constrain RIAF Models of Sagittarius A*”, ApJL, **692**, L14, 2009. [arXiv:0809.4489]
34. O’Leary, R., & Loeb, A. “Star Clusters Around Recoiled Black Holes in the Milky Way Halo”, MNRAS, **395**, 2, 2009. [arXiv:0809.4262]
35. Waxman, E., & Loeb, A. “Constraints on the Local Sources of Ultra High-Energy Cosmic Rays”, JCAP, **8**, 26, 2009. [arXiv:0809.3788]
36. Doeleman, S. S., Fish, V. L., Broderick, A., Loeb, A., & Rogers, A. “Detecting flaring structures in Sagittarius A* with high frequency VLBI”, ApJ, **695**, 1, 2009. [arXiv:0809.3424]
37. Wyithe, S., & Loeb, A. “The 21cm Power Spectrum After Reionization”, MNRAS, in press, 2008. [arXiv:0808.2323]
38. Shattow, G., & Loeb, A. “Implications of Recent Measurements of the Milky Way Rotation for the Orbit of the Large Magellanic Cloud”, MNRAS, **392**, L21, 2009. [arXiv:0808.0104]
39. Trac, H., Cen, R., & Loeb, A. “ Imprint of Inhomogeneous Hydrogen Reionization on the Temperature Distribution of the Intergalactic Medium”, ApJ, **689**, L81, 2008. [arXiv:0807.4530]
40. O’Leary, R., Kocsis, B., & Loeb, A. “Gravitational Waves from Scattering of Stellar-Mass Black Holes in Galactic Nuclei”, MNRAS, **395**, 4, 2009. [arXiv:0807.2638]
41. Fish, V. L., Doeleman, S. S., Broderick, A., Loeb, A., & Rogers, A. “Detecting Flaring Structures in Sagittarius A* with (Sub)Millimeter VLBI”, Proc. of the XXIX URSI General Assembly, 2008. [arXiv:0807.2427]

42. Loeb, A. “Long-Term Evolution in Transit Duration of Extrasolar Planets from Magnetic Activity in their Parent Stars”, *New Astronomy*, **14**, 363, 2009. [arXiv:0807.0835]
43. Dijkstra, M., & Loeb, A. “Acceleration of Galactic Supershells by Ly α Radiation”, *MNRAS*, **396**, 1, 2009. [arXiv:0809.2099]
44. Dijkstra, M., & Loeb, A. “Ly α Driven Outflows Around Star Forming Galaxies”, *MNRAS*, **391**, 457, 2008. [arXiv:0807.2645]
45. Blecha, L., & Loeb, A. “Effects of gravitational-wave recoil on the dynamics and growth of supermassive black holes”, *MNRAS*, **390**, 1311, 2008. [arXiv:0805.1420]
46. Munoz, J., & Loeb, A. “The Density Contrast of the Shapley Supercluster”, *MNRAS*, **391**, 1341, 2008. [arXiv:0805.0596]
47. Loeb, A. “Let there be Light: the Emergence of Structure out of the Dark Ages in the Early Universe”, invited review for the UNESCO EOLSS ENCYCLOPEDIA, 2008. [arXiv:0804.2258]
48. Kocsis, B., & Loeb, A. “Brightening of an Accretion Disk Due to Viscous Dissipation of Gravitational Waves During the Coalescence of Supermassive Black Holes”, *Phys. Rev. Lett.*, **101**, 041101, 2008. [arXiv:0803.0003]
49. Loeb, A. “21cm Absorption by Compact Hydrogen Disks Around Black Holes in Radio-Loud Galactic Nuclei”, *JCAP*, **5**, 8, 2008. [arXiv:0802.2717]
50. Pritchard, J. R., & Loeb, A. “Evolution of the 21 cm signal throughout cosmic history”, *Phys. Rev. D*, **78**, 10, 2008. [arXiv:0802.2102]
51. Loeb, A. “Future of Our Universe”, *Physica Plus*, 2008.
[<http://www.cfa.harvard.edu/~loeb/F.pdf>]
52. Reid, M., Broderick, A., Loeb, A., Honma, M., & Brunthaler, A., “Limits on the Position Wander of Sgr A*”, *ApJ*, **682**, 1041, 2008. [arXiv:0801.4505]

53. Loeb, A., & Wyithe, S., “Possibility of Precise Measurement of the Cosmological Power Spectrum With a Dedicated 21cm Survey After Reionization”, *Phys. Rev. Lett.*, **100**, 161301, 2008. [arXiv:0801.1677]
54. Loeb, A., “Is a Classical Language Adequate in Assessing the Detectability of the Redshifted 21cm Signal from the Early Universe?”, *JCAP*, **4**, 21, 2008. [arXiv:0801.0441]
55. Loeb, A., & Narayan, R., “Dynamical Constraints on the Local Group from the CMB and 2MRS Dipoles”, *MNRAS*, **386**, 2221, 2008. [arXiv:0711.3809]
56. Loeb, A. “The Frontier of Reionization: Theory and Forthcoming Observations”, opening lecture for “Astrophysics In the Next Decade”, [arXiv:0711.3463]
57. Munoz, J. A., & Loeb, A., “Light-Cone Distortion of the Clustering and Abundance of Massive Galaxies at High-Redshifts”, *MNRAS*, **386**, 2323, 2008. [arXiv:0711.2515]
58. Dijkstra, M., & Loeb, A., “The Polarization of Scattered Lyman Alpha Radiation Around High-Redshift Galaxies”, *MNRAS*, **386**, 492, 2008. [arXiv:0711.2312]
59. Munoz, J. A., & Loeb, A., “Verifying the Identity of High-Redshift Massive Galaxies Through the Clustering of Lower Mass Galaxies Around Them”, *MNRAS*, **385**, 2175, 2008. [arXiv:0711.0467]
60. Wyithe, S., Loeb, A., & P. M. Geil, “Baryonic Acoustic Oscillations in 21cm Emission: A Probe of Dark Energy”, *MNRAS*, **383**, 1159, 2008.
61. Sherwin, B. D., Loeb, A., O’Leary, R., “Hypervelocity Stars from the Andromeda Galaxy”, *MNRAS*, **386**, 1179, 2008. [arXiv:0709.1156]
62. Wyithe, S., & Loeb, A., “Fluctuations in 21cm Emission After Reionization”, *MNRAS*, **383**, 606, 2007. [arXiv:0708.3392]
63. Wyithe, S., & Loeb, A., “The Imprint of Cosmic Reionization on Galaxy Clustering”, *MNRAS*, **382**, 921, 2007. [arXiv:0706.3744]

64. Bromm, V., & Loeb, A., “GRB Cosmology”, invited chapter in a book on *The Physics of Gamma-Ray Bursts*, Cambridge University Press, 2007. [arXiv:0706.2445]
65. Barkana, R., & Loeb, A., “The Difference PDF of 21-cm Fluctuations: A Powerful Statistical Tool for Probing Cosmic Reionization”, *MNRAS*, **384**, 1069, 2008.
66. Wyithe, S., Loeb, A., & Schmidt, B., “The Correlation Between Star Formation and 21cm Emission During the Reionization Epoch”, *MNRAS*, **380**, 1087, 2007. [arXiv:0705.1825]
67. Cox, T. J., & Loeb, A., “The Collision Between the Milky-Way and Andromeda Galaxies”, *MNRAS*, **386**, 461, 2008. [arXiv:0705.1170]
68. Babich, D., & Loeb, A., “Imprint of Distortions in the Oort Cloud on the CMB Anisotropies”, *MNRAS*, **14**, 2, 2009. [arXiv:0705.0987]
69. Kocsis, B., & Loeb, A., “Distortion of Gravitational-Wave Packets Due to their Self-Gravity”, *Phys. Rev. D*, **76**, 084022, 2007. [arXiv:0704.1149]
70. Loeb, A., “Observable Signatures of a Black Hole Ejected by Gravitational Radiation Recoil in a Galaxy Merger”, *Physical Review Letters*, **99**, 041103, 2007. [astro-ph/0703722]
71. Loeb, A., “Missing Pages in Our Photo Album of the Infant Universe”, *Physica Plus*, **8**, 2007. [astro-ph/0702298]
72. Loeb, A., & Waxman, E. “Properties of the Radio-Emitting Gas Around SgrA*”, *JCAP*, **03**, 011, 2007. [astro-ph/0702043]
73. Carilli, C., Hewitt, J. N., & Loeb, A. “Low-Frequency Radio Astronomy from the Moon: Cosmic Reionization”, *The Return to The Moon Conf. Proc.*, STScI, 2007. [astro-ph/0702070]
74. Stark, D., Loeb, A., & Ellis, R. S. “An Empirically-Calibrated Model for Interpreting the Evolution of Galaxies During the Reionization Era”, *ApJ*, **668**, 627, 2007. [astro-ph/0701882]
75. Hoffman, L., & Loeb, A. “Dynamics of triple black hole systems in hierarchically merging massive galaxies“, *MNRAS*, **377**, 957, 2007.

76. Barkana, R., & Loeb, A. “The Physics and Early History of the Intergalactic Medium”, *Rep. Prog. Phys.*, **70**, 627-657, 2007. [astro-ph/0611541]
77. Loeb, A., & Zaldarriaga, M., “Eavesdropping on Radio Broadcasts from Galactic Civilizations with Upcoming Observatories for Redshifted 21cm Radiation”, *JCAP*, **1**, 20, 2007. [astro-ph/0610377]
78. Wyithe, S., & Loeb, A., “The correlation between the distribution of galaxies and 21cm emission at high redshifts”, *MNRAS*, **375**, 1034, 2007.
79. Loeb, A., “The Dark Ages of the Universe”, *Scientific American*, **295**, 46, 2006. [<http://cfa-www.harvard.edu/~loeb/sciam.pdf>]
80. Ginsburg, I., & Loeb, A., “Hypervelocity Collisions of Binary Stars at the Galactic Centre”, *MNRAS*, **376**, 492, 2007.
81. Babich, D. & Loeb, A., “CMB Anisotropies from Outflows in Lyman Break Galaxies”, *MNRAS*, **374**, L24 , 2007.
82. O’Leary, R., & Loeb, A., “Production of Hypervelocity Stars through Encounters with Stellar-Mass Black Holes in the Galactic Centre”, *MNRAS*, **383**, 86, 2008. [astro-ph/0609046]
83. Thompson, T., Quataert, E., Waxman, E., & Loeb, A., “Assessing the Starburst Contribution to the Gamma-Ray and Neutrino Backgrounds”, 2006. [astro-ph/0608699]
84. Dijkstra, M., & Loeb, A., “Requirements for Cosmological 21cm Masers”, *New Astronomy*, **13**, 395, 2008.
85. Broderick, A., & Loeb, A., “Testing General Relativity with High-Resolution Imaging of Sgr A*”, *Journal of Physics: Conference Series*, **54**, 448, 2006. [astro-ph/0607279]
86. Wyithe, S., & Loeb, A., “Smooth Boundaries to Cosmological HII Regions from Galaxy Clustering”, *MNRAS*, **374**, 960, 2007.
87. Loeb, A., “Thermal Evaporation of Gas from X-ray Clusters”, *JCAP*, **03**, 1, 2007.

88. Loeb, A., “First Light in the Universe”, SAAS-Fee Advanced Course, 158 pages, Springer Verlag, Berlin 2008. [astro-ph/0603360]
89. Loeb, A., “An Observational Test for the Anthropic Origin of the Cosmological Constant”, JCAP, **5**, 9, 2006.
90. Loeb, A., & Waxman, E. “The Cumulative Background of High-Energy Neutrinos”, JCAP, **5**, 3, 2006.
91. Wyithe, S., & Loeb, A. “Suppression of Dwarf Galaxy Formation By Cosmic Reionization”, Nature, **411**, 322, 2006. [astro-ph/0603550]
92. Bromm, V., & Loeb, A. “GRB Cosmology and the First Stars”, invited review, *Gamma-Ray Bursts in the Swift Era*, Sixteenth Maryland Astrophysics Conference, held 29 November - 2 December, 2005 in Washington, DC. Edited by S.S. Holt, N. Gehrels, and J.A. Nousek. AIP Conference Proceedings, Vol. 836. Melville, NY: American Institute of Physics, p.503-512, 2006. [astro-ph/0601216]
93. Barkana, R., & Loeb, A. “Light-Cone Anisotropy in 21cm Fluctuations During the Epoch of Reionization”, MNRAS, **372**, 43 2006.
94. Hoffman, L., & Loeb, A. “ Three-Body Kick to a Bright Quasar out of Its Galaxy During a Merger”, ApJ, **638**, L75, 2006.
95. Ginsburg, I., & Loeb, A. “The Fate of Former Companions to Hypervelocity Stars Originating at the Galactic Center”, MNRAS, **368**, 221, 2006.
96. Barkana, R., & Loeb, A. “Detecting Reionization in the Star Formation Histories of High-Redshift Galaxies”, MNRAS, **371**, 395 2006.
97. Babich, D., & Loeb, A. “Imprint of Inhomogeneous Reionization on the Power Spectrum of Galaxy Surveys at High Redshifts”, ApJ, **640**, 1, 2006.
98. Bromm, V., & Loeb, A. “High-Redshift Gamma-Ray Bursts from Population III Progenitors”, ApJ, **642**, 382, 2006.

99. Broderick, A., & Loeb, A. “Imaging Optically-Thin Hot Spots Near the Black Hole Horizon of Sgr A* at Radio and Near-Infrared Wavelengths”, *MNRAS*, **367**, 503, 2005.
100. Brunthaler, A., Reid, M. J., Loeb, A., & Falcke, H. “The proper motion of M 33”, *Astronomische Nachrichten*, **326**, 487 (2005).
101. Quataert, E., & Loeb, A. “Nonthermal THz to TeV Emission from Stellar Wind Shocks in the Galactic Center”, *ApJL*, **635**, L45, 2005.
102. Broderick, A., & Loeb, A. “Frequency-Dependent Shift in the Image Centroid of the Black Hole at the Galactic Center as a Test of General Relativity”, *ApJ*, **636**, L109, 2006.
103. Wyithe, S.J.B., & Loeb, A. “Cosmic Variance In the Transparency of the Intergalactic Medium After Reionization”, *ApJ*, **646**, 696 2006.
104. Loeb, A., Reid, M. J., Brunthaler, A., & Falcke, H., “Constraints on the Proper Motion of the Andromeda Galaxy Based on the Survival of Its Satellite M33 Through the Dynamics of the Local Group”, *ApJ*, **633**, 894, 2005.
105. Broderick, A., & Loeb, A., “Imaging Bright Spots in the Accretion Flow Near the Black Hole Horizon of SgrA*”, *MNRAS*, **363**, 353 2005.
106. Wyithe, S.J.B., & Loeb, A., “Constraints on the Process that Regulates the Growth of Supermassive Black Holes Based on the Intrinsic Scatter in the $M_{\text{bh}}-\sigma$ Relation”, *ApJ*, **634**, 910, 2005.
107. Wyithe, J. S. B., Loeb, A., & Barnes, D., “Prospects for Redshifted 21-cm observations of quasar HII regions”, *ApJ*, **634**, 715, 2005.
108. Babich, D., & Loeb, A., “Polarization of 21cm Radiation from the Epoch of Reionization”, *ApJ*, **635**, 1, 2005.
109. Maoz, D., Waxman, E., & Loeb, A. “The Remnants of Intergalactic Supernovae”, *ApJ*, **632**, 847, 2005.
110. Fang, T., Loeb, A., Tytler, D., Kirkman, D., & Suzuki, N. “Signature of Galactic Outflows as Absorption-Free Gaps in the Ly-alpha Forest”, 2005. [astro-ph/0505182]

111. Loeb, A., & Zaldarriaga, M., “The Small-Scale Power Spectrum of Cold Dark Matter”, *Phys. Rev. D* **71**, 103520, 2005. [astro-ph/0504112]
112. Barkana, R., & Loeb, A., “Probing the Epoch of Early Baryonic Infall Through 21cm Fluctuations”, *MNRAS*, **363**, L36, 2005.
113. Loeb, A., “A Dynamical Method for Measuring Masses of Stars with Transiting Planets”, *ApJ*, **623**, L45, 2005.
114. Hirata, C. M., Loeb, A., & Afshordi, N., “CMB B-mode polarization from Thomson scattering in the local universe”, *Phys. Rev. D*, **71**, 063531, 2005.
115. Wyithe, J. S. B., Loeb, A., & Carilli, C., “Improved Constraints on The Neutral Intergalactic Hydrogen Surrounding Quasars at Redshifts $z > 6$ ” *ApJ*, **628**, 575, 2005.
116. Barkana, R., & Loeb, A., “Detecting the Earliest Galaxies Through Two New Sources of 21cm Fluctuations”, *ApJ*, **626**, 1, 2005.
117. Furlanetto, S., & Loeb, A. “Is Double Reionization Physically Plausible?”, *ApJ*, **634**, 1, 2005.
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