CURRICULUM VITAE

Abraham Loeb

Field of Research: Theoretical Astrophysics and Cosmology
Family: Married to Dr. Ofrit Liviatan and father to daughters Klil and Lotem
Work Address:
Harvard University
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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 Titles
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
2012– *Frank B. Baird Jr. Professor of Science*, Harvard University.
2007– Director, *Institute for Theory and Computation (ITC)*, Harvard University (http://www.cfa.harvard.edu/itc/).
2016 Founding Director of the *Black Hole Initiative*, Harvard University.
2011–2020 Longest-Serving Chair (three terms), Harvard Astronomy department (http://astronomy.fas.harvard.edu/).
2021– Member of the *Center for Astrophysics Executive Board*.
2018–2021 Chair of the *Board on Physics & Astronomy* of the National Academies, USA.
2016-2018 Vice chair of the *Board on Physics & Astronomy* of the National

Academies, USA.
2016– Chair of the Advisory Committee for *Breakthrough Starshot*, Breakthrough Prize Foundation.
2015– Affiliate of the Center of Mathematical Sciences and Applications, Harvard University.
2015– Science Theory Director for the *Breakthrough Initiatives Projects* of the *Breakthrough Prize Foundation*.
2012– *Frank B. Baird Jr. Professor of Science*, Harvard University.
2011–2020 Longest-Serving Chair (three terms), Harvard Astronomy department (http://astronomy.fas.harvard.edu/).
2011– Sackler Senior Visiting Professor, School of Physics and Astronomy, Tel Aviv University.
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, 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 & Awards

2023 Cosmos Award for "Extraterrestrial", Reggio Calabria, Italy
2021 "Extraterrestrial" selected as Best Science Book of the Year and Best Nonfiction Book of the Year, Amazon
2021 Keynote Speaker in Peace BAR (spiritually Beautiful, materially Affluent and humanly Rewarding) Festival, on the topic: "The Arrival of Extraterrestrial Intelligence in the Solar System: Will the Identity and Destiny of Earth be Rewritten", Kyung Hee University System, South Korea
2021 Ignatius Speaker, on "Our Future in Space", Washington National Cathedral
2021 Keynote Speaker, National Book Festival, Library of Congress
2021 New York Times Bestseller on first week after publication date of the book *Extraterrestrial*.
2015-2020 Three of Loeb's students selected for *"Forbes 30 Under 30"* in

five years: Amir Siraj, Henry Lin and Tony Pan; Forbes Magazine.
2020 *Dean's Competitive Funds for Promising Scholarship*, Faculty of Arts & Sciences, Harvard University.
2020 Loeb's PhD student, Nick Stone, awarded the *Bok Prize*, Astronomy Department, Harvard University.
2020 *Hoopes Prize in undergraduate education* for Senior Thesis of advisee, Amir Siraj, Harvard College.
2020 Member of the "President's Council of Advisors on Science and Technology (PCAST), White House, USA.
2020 Member of the Advisory Board of "Einstein: Visualize the Impossible", Hebrew University of Jerusalem, Israel.
2020 Selected to "The 14 Most Inspiring Israelis of the 2010-2020 Decade" by the organization *"From the Grapevine"*.
2019 Svein Rosseland Lecturer at the University of Oslo, Norway.
2018 *Hoopes Prize in undergraduate education* for Senior Thesis of advisee, Eden Girma, Harvard College.
2018 Selected among "100 Hebrew University Alumni We Love", by the American Friends of the Hebrew University, Jerusalem.
2018 Distinguished Lecturer of the Center for Relativistic Astrophysics, School of Physics, Georgia Tech University, Atlanta.
2015 Elected Fellow of the International Academy of Astronautics (IAA) SETI Permanent Committee.
2015 Elected Member of the American Physical Society (APS).
2015 Member of the International Astronomical Union (IAU).
2014 Member of the Board on Physics & Astronomy (BPA) of the National Academies.
2013 Miegunyah Distinguished Visiting Fellowship, University of Melbourne, Australia.
2012 *Hoopes Prize in undergraduate education* for Senior Thesis of advisee, Marion Dierickx, Harvard College.
2012 Selected to "The 25 Most Influential People in Space" by TIME Magazine.
2012 Elected member of the American Academy of Arts & Sciences.
2012 Galileo Galilei Chair (Cattedra Galileiana) Award, Scuola Normale Superiore, Pisa, Italy.
2011 Sackler Lecturer in Astronomy, Leiden Observatory, Netherlands.
2011 Las Cumbres Observatory Prize Lecturer in Astrophysics, UC Santa Barbara.

2009/10 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.
2007 Inaugural Australian Institute of Physics (AIP) End of Year Lecturer.
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).
2004- Distinguished 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.
2002 John Simon Guggenheim Memorial Foundation Fellow.
2001 Prof. Dror Sadeh Memorial Lecturer at Tel Aviv University.
1999 Bergmann Memorial Award of the US-Israel Binational Science Foundation.
1996 *Hoopes Prize in undergraduate education* for Senior Thesis of advisee P. Young, Harvard College.
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.

Mentoring Awards
2015 *Eric Keto Prize in Theoretical Astrophysics* for PhD thesis of advisee Gongjie Li. **2012** *Eric Keto Prize in Theoretical Astrophysics* for PhD thesis of advisee Laura Blecha.
2006 Robert J. Trumpler Award of the *Astronomical Society of the Pacific* for the PhD thesis to advisee Steven Furlanetto.

Honors in Public Outreach
2014 Profiled in the New York Times Science Section by Claudia Dreifus on December 1, 2014.
2014 Profiled in DISCOVER Magazine by Steve Nadis on April 2014.
2014 Research featured on NPR Radio and Fox News TV.

2013 Profiled in Science Magazine by Rob Irion on April 2013.
2013 Chambliss Astronomical Writing Award from the American Astronomical Society, for the book "How Did the First Stars and Galaxies Form?" (2010).
2011-2015 Ten articles featured in TIME Magazine by Mike Lemonick about personal research papers.
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 Paper on *Milkomeda* (arXiv:0705.1170) was selected as one of the top 10 space stories by ASTRONOMY magazine.

Professional Service

2018- Ex-officio Member, U.S. Liaison Committee for the International Union of Pure and Applied Physics, National Academies.
2018 Member of the Consultation Group of the 2020 Decadal Survey in Astronomy and Astrophysics, National Academies.
2017- Ex-officio Member, U.S. National Committee for the International Astronomical Union.
2016- Member, President's Task Force on Diversity and Belonging, Harvard University.
2014- Member, Board on Physics and Astronomy of the National Academies.
2014-2017 Member, Dean's Faculty Resources Committee, Faculty of Arts & Sciences, Harvard University.
2014 Guest member, Editorial board, Annual Reviews of Astronomy & Astrophysics.
2013–2014 Physical Sciences Chair, Review Committee of Science Graduate Programs, Harvard University.
2013– Member, Allston Academic Planning Committee, Harvard University.
2013–2015 Member, Star Family Challenge Committee, Harvard University.
2011- Head of Astrophysics, Editorial Board, Scientific Reports, Nature Magazine.
2011-2014 Member, International Advisory Board, Publications of the Astronomical Society of Australia.

2009– Editor, Journal of Cosmology and Astroparticle Physics (JCAP).
2008–2010 Executive board for the *Energetic X-ray Imaging Survey Telescope*
2008–2010 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.
2005–2008 Science Working Group for the *Cosmic Inflation Probe*.
2005– Science Working Group for the *Murchison Wide-Field Array*.
2000– 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/).
The sixth conference on "Dynamics from the Galactic Center to the Milky-Way Halo" was held in May 2010 (http://www.cfa.harvard.edu/events/2010/dyn/).
The seventh conference on "Testing General Relativity with Astrophysical Systems" was held in May 2012 (http://www.cfa.harvard.edu/events/2012/sackler).
The eighth conference on "Debates of the Nature of Dark Matter" was held in May 2014 (http://www.cfa.harvard.edu/events/2014/sackler).
The ninth conference on "The Transient Sky" was held in May 2016 (http://www.cfa.harvard.edu/events/2016/sackler).
The tenth conference on "Gravitational Wave Astrophysics" was held in May 2018 (https://itc.cfa.harvard.edu/sackler-conference-2018).
1999–2000 Panel on Ultraviolet, Optical, and Infrared Astronomy from Space of the Astronomy and Astrophysics Survey Committee.
1998–2000 Science Working Group for the *Generation-X Space Telescope*.
1997–2000 Science Working Group for the *Next Generation Space Telescope*.

Undergraduate Students at Harvard College

Peter Young, Genevieve Shattow, Marion Dierickx, Ana-Maria Constantin,

Henry Lin, Eden Girma, Amir Siraj, Mahlet Shiferaw, Carson Ezell, Kaylie hausknecht.

Graduate Students (in chronological order)

Daniel Eisenstein (Hubble fellow, Professor at Univ. of Arizona, now tenured Professor at Harvard Univ.), Zoltán Haiman (Hubble fellow, tenured Professor at Columbia Univ.), Rosalba Perna (Harvard Junior fellow, Princeton Spitzer fellow, tenured Professor at SUNY Stony Brook), Eric Woods (teaching), Ravi Pilla (graduated), Alexandre Refregier (Professor, ETH Zurich, Switzerland), David Heyrovsky (graduated), Xiaohu Wang (graduated), Pinaki Chatterjee (graduated), Steven Furlanetto (prize postdoctoral fellowship at Caltech, tenured Professor at UCLA, Loren Hoffman (Lindheimer postdoctoral fellow, Northwestern, postdoc at Hebrew University), Daniel Babich (prize postdoctoral fellowship, Caltech), Ryan O'Leary (Einstein fellow, UC Berkeley), Genevieve Shattow (Swinburne), Joseph Munoz (researcher, Lincoln Labs), Bence Kocsis (Einstein fellow, ITC, postdoc IAS, Professor in Hungary), Laura Blecha (Einstein fellow, Maryland; Assistant Professor, U. Florida), Idan Ginsburg (Dartmouth, research fellow at CfA), Eli Visbal (Prize postdoc at Columbia U., Research Fellow at Flatiron Institute, Professor at Univ. of Toledo), Nicholas Stone (Postdoc at Columbia U., Assistant Professor at Hebrew University), Douglas Rubin (graduated, finances), Tony Pan (graduated, CEO of "Modern Electron"), Jonathan Bittner (Physics, CEO of startup), Gongjie Li (Harvard Junior fellow, Assistant Professor at Georgia Tech), Natalie Mashian (Physics, research fellow in biophysics), Marion Dierickx (Astronomy, postdoc at Harvard), Pierre Christian (Astronomy, prize postdoc in Arizone), Anna Ijjas (Visiting PhD student), Anna Patej (Physics, Prize postdoc at U. Arizona), Xiawei Wang (Astronomy), Ben Margalit (Columbia U., postdoc at UC Berkeley), Aaron Smith (UT Austin), Delilah Gates (Physics), Sophia Sanchez-Maes (Astronomy), Betty Hu (Physics), Shelley Cheng (Astronomy), Karina Mathew (English).

Visiting Graduate Students (in chronological order)

Dr. Girish Kulkarni (India), Dr. Urbano Franca (Spain), Dr. Kimi Hayasaki (Japan), Dr. Francisco Villaescusa-Navarro (Spain), Dr. Giacomo Fragione (Italy), Dr. Shmuel Bialy (Israel), Dr. Akshaya Rane (WVU, US), Dr. Erez

Michaeli (Israel), Elisa Tabor (Stanford).

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), Avery Broderick (Prof. at Univ. Waterloo, Canada), Misha Medvedev (Prof. at U. Kensas), Mark Dijkstra (MPA postdoc), Scott Gaudi (Prof. at Ohio-State U.), Jonathan Pritchard (Prof. at Imperial College, UK), Uri Keshet (Prof. at Ben Gurion Univ., Israel), Yuval Birnboim (Prof. at Hebrew Univ.), Bence Kocsis (Einstein fellow), Charlie Conroy (Prof. at Harvard), Yue Shen (Prof. at U. Illinois), Nico Yunes (Prof. at Univ. of Montana), Asaf Pe'er (Prof. at Cork Univ., Ireland), Smadar Naoz (Prof. at UCLA), Sayan Chakraborti (Harvard Society of Fellows), Konstantin Batygin (Prof. at Caltech), Yan-Fei Jiang (Einstein fellow), Lorenzo Sironi (Einstein fellow), James Guillochon (Einstein fellow), Cora Dvorkin (Hubble fellow), Igor Pikovski (Branco Weiss postdoctoral fellow), Blakesley Burkhart (Einstein fellow), Nia Imara (Future Faculty Leader fellow, Harvard), Zac Manchester (SEAS postdoctoral fellow, Harvard), Girish Kulkarni (Cambridge U.), Nicola Amorisco (ITC fellow), Anastasia Fialkov (ITC fellow), John Forbes (ITC fellow), Ana Bonaca (ITC fellow), Laura Kreiberg (Harvard Junior Fellow), Nia Imara (John Harvard fellow), Dan D'Orazio (ITC fellow), Sownak Bose (ITC fellow), Manasvi Lingam (ITC fellow), Razi Emami (ITC fellow), Paul Chesler (BHI fellow), Hsin-Yu Chen (BHI fellow), Feraz Azhar (BHI fellow), Vokram Ravi (CfA fellow), Julian Munoz (CfA fellow), Mohammad Safarzadeh (ITC fellow), Karan Jani (Vanderbilt), Richard Annantua (ITC fellow), Morgan MacLeod (ITC fellow).

Abraham Loeb - LIST OF PUBLICATIONS

Books

9. Loeb, A. *"Interstellar"*, HarperCollins (August 2023).

8. Lingam, M., & Loeb, A. *"Life In The Cosmos: From Biosignatures to Technosignatures"*, Harvard University Press (June 2021).

7. Loeb, A. *"Extraterrestrial"*, Houghton Mifflin Harcourt (January 2021).

6. Loeb, A. (Eds. D. Sloan, R.A. Batista, M. T. Hicks & R. Davies), *"Fine-Tuning in the Physical Universe"*, Cambridge University Press (2020)

5. Loeb, A. *"From the First Star to Milkomeda"*, Kindle, Amazon (2015).

4. Loeb, A. *"From the First Star to the End of Time"* (in hebrew), Carmel Publishing House, Israel (2015).

3. Loeb, A., & Furlanetto, S., *"The First Galaxies in the Universe"*, Princeton Series in Astrophysics, Princeton University Press (2013).

2. Loeb, A. *"How Did the First Stars and Galaxies Form?"*, Frontiers in Physics Series, Princeton University Press (2010).

1. Loeb, A., Ferrara, A., & Ellis, R. S. *"First Light in the Universe"*, SAAS-Fee winter school, Springer, New York (2008).

Latest Papers and Essays

1217. Loeb, A. "An Interstellar Twist to Human History", Medium (2023). [https://www.cfa.harvard.edu/˜ loeb/BIM.pdf]

1216. Loeb, A. "Breaking News: We Are Not the Smartest!", Medium (2023). [https://www.cfa.harvard.edu/˜ loeb/New2.pdf]

1215. Loeb, A. "NASA, AARO and the Galileo Project Agree on the Need for a Scientific Study of UAP", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/NASA2.pdf]

1214. Watters, W.A., Loeb, A., et al. "The Scientific Investigation of Unidentified Aerial Phenomena (UAP) Using Multimodal Ground-Based Observatories", Journal of Astronomical Instrumentation 12, 1, 2340006 (2023).[arXiv:2305.18566]

1213. Randall, M., et al. "SkyWatch: A Passive Multistatic Radar Network for the Measurement of Object Position and Velocity", Journal of Astronomical Instrumentation 12, 1, 2340004 (2023).[arXiv:2305.18562]

1212. Cloete, R., et al. "Integrated Computing Platform for Detection and Tracking of Unidentified Aerial Phenomena (UAP)", Journal of Astronomical Instrumentation 12, 1, (In Press).

1211. Loeb, A. "Self-Replicating Machines", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Rep1.pdf]

1210. Loeb, A. "The Search for Extraterrestrials May Inspire an Uplifting Future for Humanity", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Com1.pdf]

1209. Loeb, A. "Nature Made It Difficult to Weaponize Black Holes", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/SMB.pdf]

1208. Loeb, A. "Ideas Are Not Good Enough Without Good Data", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Hap1.pdf]

1207. Loeb, A. "Nothing Lasts Forever", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Epi1.pdf]

1206. Loeb, A. "The Horizon for Intergalactic Travel", Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Far1.pdf]

1205. Loeb, A. "A Log of Our Exponential History", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Log1.pdf]

1204. MacLeod, M., Antoni, A., Huang, C., Dupre, A., & Loeb, A. "Left Ringing: Betelgeuse Illuminates the Connection Between Convective outbursts, Mode switching, and Mass Ejection in Red Supergiants", ApJ (2023). [arXiv:2305.09732]

1203. Fragione, G., & Loeb, A. "Neutron Star Kicks and Implications for Their Rotation at Birth", ApJ (2023). [arXiv:2305.08920]

1202. Mukherjee, D., Siraj, A., Trac, H., & Loeb, A. "Close Encounters of the Interstellar Kind: Examining the Capture of Interstelar Objects in Near Earth Orbit", ApJ (2023). [arXiv:2305.08915]

1201. Loeb, A. "Is Spacetime Continuous or Discrete?", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Space1.pdf]

1200. Loeb, A. "Will Your Home Be Hit by a Meteorite?", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/NJ1.pdf]

1199. Loeb, A. "The Benefits of a Systematic Over Anecdotal Evidence", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Stu1.pdf]

1198. Loeb, A. "Would You Press a Button on an Extraterrestrial Gadget?", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/But1.pdf]

1197. Loeb, A. "Interstellar Diary", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Exp2.pdf]

1196. Loeb, A. "Chasing 'Oumuamua", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Chase1.pdf]

1195. Loeb, A. "Space Trash in Our Cosmic Neighborhood", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/ML1.pdf]

1194. Loeb, A. “A Play About Life Beyond Earth”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Josh1.pdf]

1193. Loeb, A. “Follow the Extraterrestrial Water”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Fo1.pdf]

1192. Loeb, A. “Training AI on Desired Content”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/AI2.pdf]

1191. Loeb, A. “The Cosmic Distribution of Love”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Next1.pdf]

1190. Loeb, A. “Our Survival in the Milky Way”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/See1.pdf]

1189. Loeb, A. “A Blind Date with Interstellar Matter”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Mat1.pdf]

1188. Loeb, A. “The Density of What Matters in the Universe”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Den1.pdf]

1187. Loeb, A. “AI Alignment Resembles Helicopter Parenting””, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Align1.pdf]

1186. Loeb, A. “Water as Rocket Fuel on the Moon or Mars”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Water1.pdf]

1185. Loeb, A. “The State of the Universe”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/State1.pdf]

1184. Loeb, A. “Elon Musk is Wrong About Aliens!”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Elon.pdf]

1183. Loeb, A. “Fellows of the Galileo Project”, Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/Postd.pdf]

1182. Loeb, A. “Afterthoughts on the Second UAP Senate Hearing”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Pos1.pdf]

1181. Loeb, A. “The Shots Heard Round the World”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Hum1.pdf]

1180. Loeb, A. “Tracking Extraterrestrial Packages with AI”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Al1.pdf]

1179. Loeb, A. “Reflections of a Farm Boy: “From Farm to Table” Science”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/DC1.pdf]

1178. Loeb, A. “Philanthropy by Inspiration”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Phil1.pdf]

1177. Loeb, A. “Extraterrestrial Offer Benefits, Not Existential Risk”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Exist1.pdf]

1176. Loeb, A. “On the Virtue of Real Action in Place of ‘Virtue Signaling”’, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Virt.pdf]

1175. Loeb, A. “Planetary Defense Warning Stations”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Prot.pdf]

1174. Loeb, A. “The New Society of AI”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/AIEco.pdf]

1173. Loeb, A. “The Cosmos is Different from Our Backyard”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/AIS1.pdf]

1172. Loeb, A. “Will Future AI Systems be Legally Liable?”, Medium (2023).

[https://www.cfa.harvard.edu/˜ loeb/Broad1.pdf]

1171. Loeb, A. "Will Future AI Systems be Legally Liable?", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Leg1.pdf]

1170. Loeb, A. "Dating Interstellar Objects with the Webb Space Telescope", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Webb1.pdf]

1169. Loeb, A. "Knowledge is Strength: Extraordinary Evidence Requires Extraordinary Funding", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Gov1.pdf]

1168. Ezell, C., & Loeb, A. "Detection Rate of 50-meter Interstellar Objects with LSST", ApJL (2020). [arXiv:2303.14766]

1167. Loeb, A. "What is the Proper Pronoun for GPT-4?", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/AI1.pdf]

1166. Hoang, T., & Loeb, A. "Implications of Evaporative Cooling by H_2 for 1I/'Oumuamua", ApJL (2020). [arXiv:2303.1386]

1165. Loeb, A. "The Simplicity of Telling the Truth", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/In1.pdf]

1164. Loeb, A. "'Oumuamua Was Not a Hydrogen-Water Iceberg", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Truth1.pdf]

1163. Loeb, A. "Is 'Oumuamua a Hydrogen-Water Iceberg?", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Ou.pdf]

1162. Loeb, A. "Exotic Propulsion", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Prop.pdf]

1161. Loeb, A. "1984", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Ninety.pdf]

1160. Loeb, A. "Open-Minded AI", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Chat1.pdf]

1159. Loeb, A. "Science is an Infinite Box of Chocolates", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/World1.pdf]

1158. Siraj, A. & Loeb, A. "Localizing the First Interstellar Meteor with Seismometer Data", ApJL (2023). [arXiv:2303.07357]

1157. Loeb, A. "Interstellar Objects from Broken Dyson Spheres", RNAAS (2023). [arXiv:2303.08013]

1156. Loeb, A. "Interstellar Interpretation of Plato's Cave Allegory", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Kick1.pdf]

1155. Loeb, A. "How to Navigate Academia", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Car1.pdf]

1154. Hoffman, C., Chen, N., DiMatteo, T., Ni, Y. Bird, S., Croft, R. & Loeb, A. "Triple and Quadruple Black Holes in the ASTRID Simulation at $z \sim 2$", ApJ (2023). [arXiv:2303.04825]

1153. Loeb, A. "A Gift From a Silver Star", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Exped1.pdf]

1152. Loeb, A. "Keep the Branch We Are Sitting On!", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Astro1.pdf]

1151. Loeb, A. "Separating Science from Fiction", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Fict1.pdf]

1150. Loeb, A. "Distinguishing Ourselves from Nature", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Flow1.pdf]

1149. Loeb, A. "Do Technological Civilizations Self-Destruct or Self-Replicate?", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Risk1.pdf]

1148. Loeb, A. "Herlinde Koelbl's Fascination With Scientists", Medium (2023).
[https://www.cfa.harvard.edu/~ loeb/Fas.pdf]

1147. Loeb, A. "Wishing a Better Future for All of Us", Medium (2023).
[https://www.cfa.harvard.edu/˜ loeb/BD.pdf]

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