

CURRICULUM VITAE

Asaf Pe'er

August 2021

Field of Research:

Theoretical astrophysics, with focus on high energy astrophysics, relativistic plasma astrophysics, astroparticle physics and radiative transfer problems in various transient astronomical objects.

Contact Address:

Department of Physics

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Academic Qualifications

12/2004 Ph.D. High energy Astrophysics, Weizmann Institute of Science, Rehovot, Israel.

06/1999 M.Sc. in Physics, Weizmann Institute of Science, Rehovot, Israel.

06/1993 B.Sc. in Physics and Mathematics (“Talpiot” program), The Hebrew University of Jerusalem, Israel.

Thesis work

Ph.D. “The emission of radiation from Gamma Ray Bursts”. Adviser: Prof. Eli Waxman

M.Sc. “Optically stimulated chemical HBr laser - summary of simulation and spontaneous emission experiments”. Advisers: Prof. Moshe Shapiro, Weizmann Institute of Science; Dr. Yehuda Nachshon, IADA (RAFAEL); Prof. Uri Oppenheim, Technion.

Positions held

2018 - Associate Professor, Physics Department, Bar-Ilan University, Israel

2018 - Professor, Physics Department, University College Cork (UCC), Cork, Ireland.

2012 - 2018 Lecturer (tenured), Physics Department, University College Cork (UCC), Cork, Ireland.

2014: Long term visitor, Space Telescope Science Institute, Baltimore, Maryland.

2010 - 2012: Research Associate, Institute of Theory and Computation, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA.

2007 - 2010: Riccardo Giacconi Fellow, Space Telescope Science Institute, Baltimore, MD.

2004 - 2007: Postdoctoral fellowship, Astronomical Institute “Anton Pannekoek”, Amsterdam, The Netherlands.

2005 - 2006: Long term visitor, Pennsylvania State University, University Park, Pennsylvania. Host: Peter Mészáros

1999 - 2004: Ph.D. student, Weizmann Institute of Science, Rehovot, Israel

- 1990 - 1999: Military service. (Major)
Participant in “Talpiot program”, 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. Following three years of undergraduate studies, the graduates serve additional five years as R&D officers.
- 1996-1999 Research physicist, RAFAEL, IADA. Main research topics: hydrodynamical simulations and experimental projects in chemical lasers.
- 1993-1996 Research physicist, Israeli Air Force & Israeli Aircraft Industry. Main research topics: numerical aerodynamical simulations.

Selected Grants, Honors & Award

As P.I.

- 2020 Irish Center for High End Computing (ICHEC) proposal #ucast010b (P.I., 1,000,000 core hours)
- 2017 EU ERC Consolidator Grant #773062 (P.I., €1,951,744)
- 2017 IRC GOIPG/2017/1146 (project leader, €94,000)
- 2016 Irish Center for High End Computing (ICHEC) proposal #ucast008b (P.I., 800,000 core hours)
- 2013 Marie Curie FP7-PEOPLE-2013-CIG #618499 (P.I., €100,000)
- 2013 IRC GOIPG/2013/315 (project leader, €96,000)
- 2011 Fermi cycle 4 proposal #41162 (P.I., \$80,000)
- 2010 Fermi cycle 3 proposal #31014 (P.I., \$80,000)
- 2009 Fermi cycle 2 proposal #21267 (P.I., \$70,000)

As Co.I. / principle Co.I.

- 2021 Chandra cycle 23 proposal #23500404 (Co.I., 80 ks + 4 HST orbit + 24 NRAO hours; P.I. Fruchter)
- 2019 Chandra cycle 21 proposal #21500258 (Co.I., 120 ks; P.I. Fruchter)
- 2019 Hubble cycle 27 proposal #HST-GO-15993 (Co.I., 11 orbits; P.I. Fruchter)
- 2018 Chandra cycle 20 proposal #20500677 (Co.I., 120 ks; P.I. Fruchter)
- 2018 Hubble cycle 26 proposal #HST-GO-15613 (Co.I., 11 orbits; P.I. Fruchter)
- 2016 Chandra cycle 18 proposal #18500670 (Co.I., 120 ks; P.I. Fruchter)
- 2016 Hubble cycle 24 proposal #HST-GO-14851 (Co.I., P.I. Fruchter)
- 2015 Chandra cycle 17 proposal #17500753 (Co.I., 120 ks; P.I. Fruchter)
- 2014 Hubble cycle 22 proposal #HST-GO-13951 and HST-GO-13950 (Principal Co.I.)
- 2014 Chandra cycle 16 proposal #16500869 (Co.I., \$60.000, 120 ks + 11 HST orbits; P.I. Fruchter)
- 2013 Chandra cycle 15 proposal #15500895 (Co.I., \$60.000, 120 ks + 11 HST orbits; P.I. Fruchter)
- 2012 Chandra cycle 14 proposal #14500851 (Co.I.; P.I. Fruchter)
- 2012 Fermi cycle 5 proposal #51382 (Co.I., \$80.000; P.I. Fruchter)
- 2011 HST cycle 19 proposal #12502 (Co.I., 21 orbits; P.I. Fruchter)
- 2011 Chandra cycle 13 proposal #13500898 (Co.I., 120 ks; P.I. Fruchter)
- 2010 Chandra cycle 12 proposal #12500918 (Co.I., 120 ks [\$45000]; P.I. Fruchter)
- 2009 Fermi cycle 2 proposal #21035 (Co.I., \$80.000; P.I. Zhang)
- 2008 Fermi cycle 1 proposal #11190 (Co.I., \$210.000; P.I. Kouveliotou)

Additional awards

- 2007 The Riccardo Giacconi fellowship award, STScI
- 1990 Participant in "Talpiot program", Israel

Post-Graduate supervision

- Dr. Mukesh Kumar (2019 -)
- Dr. Damien Bégué (2020 -)
- Dr. Husne Dereli-Bégué (2020 -)

Graduate student supervision

- Dr. Christoffer Lundman (co-supervisor; 2010 - 2014. Currently: post-doc, Stockholm University)
- Dr. Michael O’Riordan (2013 - 2018. Currently: works for the Bank of Ireland)
- Mr. Danny Riordan (2013 -)
- Mr. Killian Long (2016 -)
- Mr. John Wallace (2018 -)
- Ms. Hezbibha Isravel (2021 -)
- Ms. Liraz Kativ (2018)

- Mr. Shukai Sun (2020)
- Mr. Benjamin Pevzner (2020)
- Mr. Yossef Nissim Kindi (2020 -)
- Between 2006- 2007 I was involved in the supervision of the Ph.D. student Hylke Koers (his Ph.D. supervisors were prof. Karel Gaemers and prof. Ralph Wijers) and the Ph.D. student Jacob Frederiksen (a visiting student from Stockholm).

Visiting graduate students

- Mr. Filip Samuelsson (2019- 2020)
- Mr. GuoQiang Zhang (2021- 2022)

Undergraduate students project supervision

- 2013: Mr. Hugh Barlow & Mr. Shane O'Mahony (summer project)*
2015: Mr. Killian Long (final year project)*
2015: Mr. Stephen Brophy (final year project)
2017: Mr. John Wallace (final year project)
2021: Ms. Gowri Anil (summer project)
2021: Mr. Yehuda Ben Shabo (summer project)

*: The results of these projects led to scientific publications. The research papers were published in the Astrophysical Journal.

Teaching

In Bar-Ilan:

- 86-115 Mechanics I (2018/19-)
86-676 General Relativity and Introduction to Cosmology (2018/19-)
86-677 Introduction to Plasma Physics (2019/20-)
86-351 Introduction to Particles and Nuclear Physics (2020/21-)

In UCC:

- PY 1052 "Introductory Physics I" (2012/13 - 2014/15)
PY 2104 "Introduction to Thermodynamics and Statistical Physics" (2012/13 - 2017/18)
PY 3102 "Quantum Mechanics" (2015/16 - 2017/18)
PY 4112 "Gravitation and Cosmology" (2012/13 - 2017/18)
PY 4106 "Quantum Field Theory" (2013/14 - 2016/17)
PY 4111 "Galactic and Extragalactic Astrophysics" (2016/17)

All these courses were developed by myself.

Online lecture notes are available on my webpage, see <http://www.physics.ucc.ie/apeer>
→ lectures

Teaching Assistantship

- 2002: "Topology and Geometry for physicists" (Prof. M. Milgrom)
1999: "High energy astrophysics" (Prof. E. Waxman)

Service

- Referee for Science, the Astrophysical Journal, Monthly Notices of the Royal Astronomical Society, Astronomy and Astrophysics, Advances in Astronomy, Advances in Space Research, Astrophysics and Space Science, Journal of Cosmology and Astroparticle Physics, Journal of Plasma Physics, Publications of the Astronomical Society of Japan, Physics Letters and Rev. Mexicana de Astronomia Y Astrofisica.
- External examiner and thesis reporter of the Ph.D. candidate Dr. Damien Bégué (University “La Sapienza”, Rome, Oct. 2014)
- Examiner of the Ph.D. candidate Dr. Mark Kennedy (University College Cork, April 2017)
- Examiner of the Master candidate Mr. Simon Willis (University College Cork, Feb. 2016)
- Participate in the selection committee of proposals submitted to the Israel Space Agency
- Participate in the review committee of NSF and NASA / ATP proposals.
- External reviewer for NASA / ADAP proposals
- External reviewer for NSF proposals
- External reviewer for HST Director Discretionary proposals
- External reviewer for the Estonian Research Council (ETAg)
- External reviewer for Dutch Research Council (NWO)
- External reviewer for Israely Science Foundation (ISF)
- Participate in APS white paper “The future of ground-based gamma-ray astronomy”
- Participate in the local organization committee of “Niall Fest 2018”, in honor of Niall O’Murchadha’s career in general relativity (Cork, Ireland, May 2018)
- Advisor to the scientific committee of “14th Marcel Grossman meeting” (Rome, Italy, 2015)
- Participate in scientific organization committee of the workshop “future directions in the study of relativistic jets” (Skokloster, Sweden, Sep. 2013)
- Participated in the local organization committee & “best poster” selection committee of “070228: The next decade of GRB afterglows” conference (Amsterdam, March 2007)
- Member, Institute of Physics in Ireland (IOPI); organizer of IOPI guest speaker program (2013- 2018)
- Organizer of internal seminars. “Astro Wine & Cheese” seminar and “accreting compact objects discussion group” in JHU and STScI; “Astronomy pizza meeting club” in the University of Amsterdam.
- Co-organizer of “Pizza astro-lunch” in UCC (2012 - 2018).

- Member, GRIPS consortium.
- Member, Astrogam consortium.
- Member, GTA (GRB Temporal Analysis) consortium.
- Member, THESEUS project consortium.
- Member, Irish LOFAR consortium.
- Member, Cherenkov Telescope Array (CTA).
- Member, ULTRASAT consortium.
- Special lecture: “Applying to academic jobs” given to UCC graduate students (March 2016). See <http://www.physics.ucc.ie/apeer> → Lectures

Outreach activities

- “Physics for All” blog, 2015 -
See <http://www.physics.ucc.ie/apeer> → Physics for all
- “A Journey through modern astrophysics”, a special talk to high-school students, Bar-Ilan University, Israel, February 2020
- “Space and the moon”, a special talk for elementary school kids, Modi’in, Israel, April 2019
- “Physics on the Extreme: Gamma-Ray Bursts, Gravitational Waves and the Dawn of Multi-Messenger Astronomy”, in “Pint of Science”, Cork, Ireland, May 2018
- “General Relativity in a Nutshell” special talks given to high-school students, Cork, Ireland, May 2017
- Co-organizer, “Frontiers of Physics” meeting for high-school teachers, September 2013
- Referee for “Physics prize” competition, organized by the physics society in UCC, Cork, March 2013
- Public lectures:
 - “Physics on the extreme: gamma-ray bursts, gravitational waves and the dawn of multi-messenger astronomy” Israel Astronomical Association, Tel Aviv, Nov. 2018
 - “GW/GRB170817: the dawn of multimessenger astronomy”, Physics and astronomy society in Cork, March 2018.
 - “Gamma ray bursts: the most extreme explosions in the universe” as part of space week in Cork, Cork, Jan. 2017
 - “Gamma ray bursts: the most extreme explosions in the universe” Israel Astronomical Association, Tel Aviv, Dec. 2016
 - “100 years of general relativity”, Cork, Nov. 2015;
 - “The highest energy cosmic rays”, Cork, Nov. 2012;
 - “The measure of cosmological distances”, STScI, August 2008;
 - “Life and death of stars”, Weizmann Inst., July 2004.

- Public explanation on the discovery of gravitational waves published in the social media and became “viral”. Can be found at
<http://rotter.net/forum/scoops1/289120.shtml#1>
<https://www.facebook.com/asaf.peer/posts/10207313001856551>
(text in Hebrew).
- Participated in open days in the university college, Cork, and earlier in the astrophysics department at the University of Amsterdam.

Invited talks in international conferences

1. "Theory of plateau phase in GRBs", in 16th Marcel-Grossmann meeting (MG16) [held via zoom] (July 2021)
2. "Studying jet launching and properties using cu-HARM- a new, cuda-version of HARM", in "Fourth Purdue Workshop on Relativistic Plasma Astrophysics", Purdue, IN (to be given; meeting postponed due to Codiv pandemic)
3. "Relativistic jets formation and collimation: status on theory and numerical simulations" in "Shalom Kobe: a workshop to bring together experts on High Energy Astrophysics from Japan and Israel", Kobe, Japan (July 2019)
4. "Cosmic rays, GRBs and shock waves" in "Gamma-Ray Bursts and Related Astrophysics in Multi-Messenger Era", Nanjing, China (May 2019)
5. "High energy radiation from jets and accretion disks near rotating black holes" in NiallFest 2018, Cork, Ireland (May 2018)
6. "High energy radiation from jets and accretion disks near rotating black holes" in 2nd CTA-Ireland meeting, Dublin, Ireland (August 2017)
7. "Short gamma ray bursts and neutron star binary mergers: observations and theory" in Nordita workshop on the physics of extreme gravity stars, Stockholm, Sweden (June 2017)
8. "GRBs: What do we learn from many high energy photons" in MAGIC science meeting, CERN, Switzerland (April 2017)
9. "CTA impact on the study of Gamma-Ray Bursts" in CTA and Ireland workshop, Armagh, North Ireland (Jan. 2017)
10. "Photospheric Emission in Gamma-Ray Bursts" in the 41st COSPAR meeting, Istanbul, Turkey (Aug. 2016. Note: this COSPAR meeting was canceled)
11. "The effect of radiation on the reconnection rate in the striped wind model" in the 2nd Purdue workshop on relativistic plasma astrophysics, Purdue, IN (May 2016)
12. "Gamma-ray bursts with the Cherenkov Telescope Array" in the general meeting of the LST collaboration, Munich, Germany (Jan. 2016)
13. "Hydrodynamic Properties of GRB Outflows Based on Thermal Emission" in "14th Marcel Grossman Meeting", Rome, Italy (July 2015)
14. "ASTROGAM Contribution to Understanding Gamma-Ray Bursts Physics", in the second ASTROGAM workshop, Paris, France (March 2015)
15. "The Physics of Gamma-Ray Bursts Prompt Emission", a series of 3 lectures given in "Gamma Ray Bursts at UCD" workshop, Dublin, Ireland (September 2014)
16. "Emission Mechanisms in Gamma-Ray Bursts" in "SNe and GRBs 2013", Kyoto, Japan (Nov. 2013)

17. “Energetic and broad-band spectral distribution of emission from XRBs” in ISSI workshop on “The physics of Accretion on to black holes”, Bern, Switzerland (October 2012)
18. “Radiative Mechanism in GRB prompt emission” in “15 years of Gamma-Ray Bursts afterglows: progenitors, environments and host galaxies from the nearby to the early Universe”, Málaga, Spain (October 2012)
19. “Theory of Photospheric Emission in GRBs” in “13th Marcel Grossmann Meeting”, Stockholm, Sweden (July 2012)
20. “Photospheres in Gamma-Ray Bursts: a Critical Overview” in “13th Marcel Grossmann Meeting”, Stockholm, Sweden (July 2012)
21. “Radiative processes during GRB prompt emission” in “Gamma Ray Bursts in the Era of Rapid Followup”, Liverpool, UK (June 2012)
22. “Impact of Fermi on Gamma-ray Burst Studies”, 2011 Fermi Symposium, Rome, Italy (May 2011)
23. “A New Model For Emission From Microquasar Jets”, 2010 Hubble Fellows Symposium, STScI, Baltimore, MD (March 2010)
24. “Photospheric Emission in Gamma-Ray Bursts” in “Nonlinear Processes in Astrophysical Plasmas: Particle Acceleration, Magnetic Field Amplification, and Radiation Signatures”, KITP, Santa Barbara, CA (October 2009)
25. “Thermal Emission in GRB Prompt Emission Phase”, in “The shocking universe: gamma ray bursts and high energy shock phenomena”, Venice, Italy (September 2009)
26. “The Effect of a Photospheric Emission on GRB Spectra”, in “Physics of relativistic flows: An observational view” Stockholm, Sweden (June 2009)
27. “Radiative Processes in GRB Prompt Emission”, in “KIAA program on GRB Physics”, Kavli Institute for Astronomy and Astrophysics (KIAA) in Peking University, Beijing, China (May 2009)
28. “Thermal Emission in Gamma-Ray Bursts”, 2009 Hubble Fellows Symposium, STScI, Baltimore, MD (March 2009)
29. “Temporal Evolution of Thermal Emission in GRB Prompt Emission Phase”, 2008 Nanjing GRB conference, Nanjing, China (June 2008)
30. “The Observable Effects of a Photospheric Component on GRBs and XRFs Prompt Emission Spectrum”, GRB mini-symposium, Stockholm, Sweden (September 2006)
31. “The Physics of GRB Prompt Emission”, GRB RTN school, Santorini, Greece (September 2005)

Department Colloquia

32. “New thoughts on the prompt emission of gamma-ray bursts”, Aryabhata Research Institute of Observational Sciences (ARIES), Nainital, India (September 2020)

33. "Gamma-ray bursts prompt emission: breakthroughs and challenges", University of Crete, Heraklion, Greece (October 2019)
34. "Accretion, Ejection, Jets, GRBs and Cosmic Rays", Ben-Gurion University, Be'er-Sheva, Israel (June 2019)
35. "Cosmic Rays, GRBs and Shock Waves", Dublin Institute of Advanced Studies, Dublin, Ireland (March 2019)
36. "Cosmic Rays, GRBs and Shock Waves", University College Cork, Cork, Ireland (March 2019)
37. "Frontiers in the Study of Gamma-ray Bursts", Bar Ilan University, Ramat-Gan, Israel (Dec. 2017)
38. "Frontiers in the Study of Gamma-ray Bursts", Dublin College University, Dublin, Ireland (Nov. 2017)
39. "The Underlying Physics of Gamma-Ray Bursts", Trinity College, Dublin, Ireland (Dec. 2016)
40. "A paradigm shift in understanding gamma-ray bursts", John-Moorse University, Liverpool, UK (Feb. 2015)
41. "A paradigm shift in understanding gamma-ray bursts", Joint Space Science Institute, UMD, Maryland (August 2014)
42. "A paradigm shift in understanding gamma-ray bursts", Rome Astronomical Observatory, Rome, Italy (Apr. 2014)
43. "A paradigm shift in understanding gamma-ray bursts", University of Amsterdam, Amsterdam, the Netherlands (Feb. 2014)
44. "The basic concepts of general relativity", UCC, Cork, Ireland (Nov. 2013)
45. "A Paradigm shift in understanding GRBs", UCC, Cork, Ireland (Nov. 2012)
46. "What do we know about the prompt emission in GRBs ?", CCAPP, Ohio State, Columbus, Ohio (May 2012)
47. "Physics of the Most Extreme Objects in the Universe", Open University, Israel (April 2012)
48. "Study the prompt emission phase in GRBs: the role of photospheric emission", University College Cork, Ireland (Dec. 2011)
49. "Thermal emission from Gamma-ray bursts", UMBC, Maryland (Nov. 2010)
50. "The highest energy Cosmic Rays", Ben Gurion University, Be'er Sheva, Israel (May 2010)
51. "The highest Energy Cosmic Rays", Oskar Klein Centre, Stockholm, Sweden (May 2010)

52. "Observations, theory and implications of thermal emission from Gamma-ray bursts", Radboud University Nijmegen, the Netherlands (Feb. 2010)
53. "A Model for Emission from Microquasar Jets: Consequences of a Single Acceleration Episode", University of Southampton, UK (Jan. 2010)
54. "Gamma-ray bursts: past, present and future", Carnegie institute, Washington, DC. (Jan. 2010)
55. "Gamma-ray bursts: past, present and future", University of North Texas (UNT), Dallas, Texas (Oct. 2009)
56. "A Model for Emission from Microquasar Jets: Consequences of a Single Acceleration Episode", invited seminar in University of Maryland, Maryland (Oct. 2009)
57. "A model for emission from Jets in X-ray Binaries: Consequences of a single acceleration episode", University of Nevada, Las Vegas (UNLV), Las Vegas, Nevada (Jan. 2009)
58. "Thermal emission in GRB's", NASA Goddard space flight center, Washington, DC (Oct. 2008)
59. "Open questions in the study of Gamma-Ray Bursts", Virginia Tech, VA (Aug. 2008)
60. "Temporal evolution of thermal emission in GRB's", Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India (Sep. 2007)
61. "Analysis of the thermal emission component in GRBs", Prague, Czech republic (May 2007)
62. "The observable effect of a photospheric component on GRBs prompt emission spectrum: peak energy clustering and flat spectra above the thermal peak", University of Nevada, Las Vegas (UNLV), Las Vegas, Nevada (Feb. 2006)
63. "The Signature of a wind reverse shock in GRB afterglows", Kavli Institute for Theoretical Physics (KITP), Santa Barbara, California (Jan. 2006)
64. "Peak energy clustering and efficiency in compact objects", Pennsylvania State University (PSU), State College, Pennsylvania (Nov. 2005)
65. "High energy photon emission in the early afterglow of GRBs", Max Planck Institute for Astrophysics (MPA), Garching, Germany (Jan. 2005)

Contributed talks

66. "Understanding prompt emission: where do we stand ?", in 16th Marcel-Grossmann meeting (MG16) [held via zoom] (July 2021)
67. "The connection between GRB prompt emission physics and high energy cosmic rays: new constraints using Fermi data" in "Ninth International Fermi Symposium" Johannesburg, South Africa [held via zoom] (April 2021)

68. “Pith-angle Diffusion and Bohm-type Approximations in Diffusive Shock Acceleration”, in HEPRO VII, Barcelona, Spain (July 2019)
69. “High energy radiation from jets and accretion disks near rotating black holes” in Nordita workshop on the physics of extreme gravity stars, Stockholm, Sweden (June 2017)
70. “Dynamical properties of internal shocks revisited” in European week of space science (EWASS), Prague, Czech republic (June 2017)
71. “Poynting flux dominated jets challenged by their photospheric emission” in “Mysterious Connection Between Superluminous Supernovae and Gamma-Ray Bursts”, Baltimore, MD (May 2016)
72. “Poynting flux dominated jets challenged by their photospheric emission” in “Relativistic Jets: creation, dynamics and internal physics”, Krakow, Poland (April 2015)
73. “A two component jet model for the tidal disruption event Swift J1644”, in the 60th meeting of the Israel Physical Society (IPS), Ben Gurion University, Israel (Dec. 2014)
74. “Constraining sources of ultra-high energy cosmic rays using high energy observations with the Fermi satellite” in “The physics of astronomical transients”, Aspen, Colorado (Jan. 2012)
75. “The connection between thermal and non-thermal emission in gamma-ray bursts: general considerations and GRB090902B as a case study” in “Gamma-Ray Bursts 2010 Conference”, Annapolis, Maryland (Nov. 2010)
76. “Radio quiet AGN’s as possible sources of ultra-high energy cosmic rays” in “CCAPP Symposium 2009: Towards Fundamental Breakthroughs in Astrophysics and Cosmology within the Next Decade”, Ohio State University, Columbus, Ohio (Oct. 2009)
77. “Theoretical implications of thermal emission from GRBs”, in “Gamma Ray Bursts symposium 2008”, Huntsville, AL (Oct. 2008)
78. “Analysis of the thermal emission component in GRBs”, in “070228: The next decade of GRB afterglows”, Amsterdam, the Netherlands (March 2007)
79. “The observable effects of a photospheric component on GRBs prompt emission spectrum”, Royal Society Gamma-ray burst discussion meeting, London, UK (Sep. 2006)
80. “The Signature of a wind reverse shock in GRB afterglows”, in “Swift and GRBs: Unveiling the Relativistic Universe”, Venice, Italy (June 2006)
81. “Prompt GRB spectrum: detailed calculations and the effect of pair production”, GRB- RTN meeting, Padova, Italy (April 2004)
82. “The effect of pairs on GRB prompt emission spectra”, International School on astroparticle physics, Conca Specchiulla, Italy (July 2003)

83. “High energy photons and neutrino emission in the early afterglow of GRBs”, *Frontiers in particle astrophysics and cosmology*, München, Germany (Oct. 2001)

Additional Seminars

84. In addition to the above, since January 2008 I gave over 40 formal seminars in various physics departments worldwide.

Press releases

Interview for “Haaretz” newspaper (in Hebrew) on dark matter:

- “Observations confirm: there are galaxies in the universe which are lacking dark matter”, July 23rd 2021, see <https://www.haaretz.co.il/science/space/.premium-1.10020740>

Following an ERC consolidating grant award, an article about my research appeared in UCC research spotlight website:

- “Dr Asaf Pe’er awarded ERC grant“ in UCC research website on Dec. 2017, see <https://www.ucc.ie/en/research/spotlight/drasafpeerawardedercgrant/>

The following articles which refer to my works appeared in *Nature*, as well as popular science magazines:

- “X-ray vision can reveal the moment of birth of violent supernovae”, appeared in “UK Swift and GRBs in the press” on Dec. 10th, 2012 . (many newspapers); see <http://www.swift.ac.uk/about/press.php#2012>
- ”Astrophysicists from around the world at LJMU-led Conference”, appeared in the Liverpool John Moores University press release on June 26th, 2012. see http://www.ljmu.ac.uk/NewsUpdate/index_123618.htm
- “Cosmic blasts powered by a hot glow” by Eric Hand, appeared in “Nature” News, May 8th, 2012. See <http://www.nature.com/news/cosmic-blasts-powered-by-a-hot-glow-1.10598>
- “Mysterious gamma-ray bursts continue to surprise” by Bill Andrews, appeared in “Astronomy.com” blog on July 24th 2009. See <http://cs.astronomy.com/asycs/blogs/astronomy/2009/07/24/mysterious-gamma-ray-bursts-continue-to-surprise.aspx>
- “Gamma-Ray Burst Afterglows Brighter Than Expected” by JR Minkel, appeared in *Scientific American* on July 8th, 2008. See <http://www.scientificamerican.com/article.cfm?id=gamma-ray-burst-afterglow>

Asaf Pe'er - LIST OF PUBLICATIONSRefereed journal papers

1. Ghirlanda, G., et. al. (including **A. Pe'er**), “*Gamma Ray Burst studies with THESEUS*”, 2021, Experimental Astronomy, submitted
2. Ciolfi, R., et. al. (including **A. Pe'er**), “*Multi-Messenger Astrophysics with THESEUS in the 2030s*”, 2021, Experimental Astronomy, submitted
3. Vyas, M.K., **Pe'er, A.**, & Eichler, D., “*Predicting Spectral Parameters in the Backscattering Dominated Model for the Prompt Phase of GRBs*”, 2021, Astrophys. J., submitted (arXiv:2103.06201)
4. Wallace, J., & **Pe'er, A.**, “*An Observational Signature of Sub-equipartition Magnetic Fields in the Spectra of Black Hole Binaries*”, 2021, Astrophys. J., 916, 63
5. Bret, A., & **Pe'er, A.**, “*Bridging the Gap Between Collisional and Collisionless Shock Waves*”, 2021, J. Plasma Physics, 87 (02), 905870204
6. Li, L., Ryde, F., **Pe'er, A.**, Yu, H.-F., & Acuner, Z., “*Bayesian Time-Resolved Spectroscopy of Multi-Pulsed GRBs: Variations of Emission Properties amongst Pulses* “, 2021, Astrophys. J. (Sup.), 254, 35
7. Vyas, M.K., **Pe'er, A.**, & Eichler, D., “*A backscattering dominated prompt emission model for the prompt phase of Gamma ray bursts*”, 2021, Astrophys. J., 908, 9
8. The CTA consortium (including **A. Pe'er**), “*Sensitivity of the Cherenkov Telescope Array for probing cosmology and fundamental physics with gamma-ray propagation* “, 2020, Journal of Cosmology and Astropart. Phys., 02, 048
9. The CTA consortium (including **A. Pe'er**), “*Sensitivity of the Cherenkov Telescope Array to a dark matter signal from the Galactic centre*”, 2021, Journal of Cosmology and Astropart. Phys., 1, 057
10. Samuelsson, F., Begue, D., Ryde, F., **Pe'er, A.**, & Murase, K. “*Constraining Low-luminosity Gamma-Ray Bursts as Ultra-high Energy Cosmic Ray Sources Using GRB 060218 as a Proxy*”, 2020, Astrophys. J., 902, 148
11. Dereli-Bégué, H., **Pe'er, A.**, & Ryde, F., “*Classification of Photospheric Emission in Short GRBs*”, 2020, Astrophys. J., 897, 145
12. Diekmann, M.E., Riordan, D., & **Pe'er, A.**, “*Change of a Weibel-type to an Alfvénic shock in pair plasma by upstream waves*”, 2020, Physics of Plasmas, 27, 062107
13. Kangas, T., Fruchter, A., Cenko, B., Corsi, A., De Ugarte Postigo, A. **Pe'er, A.**, et. al., “*The late-time afterglow evolution of long gamma-ray bursts GRB 160625B and GRB 160509A*”, 2020, Astrophys. J., 894, 43
14. Acuner, Z., Ryde, F., **Pe'er, A.**, Mortlock, D., & Ahlgren, B., “*The Fraction of Gamma-ray Bursts with an Observed Photospheric Emission Episode*”, 2020, Astrophys. J., 893, 128

15. Sharma, V., et. al. (including **A. Pe'er**), *Time Varying Polarized Gamma-Rays from a Single Pulse GRB Emission: Evidence for Magnetized Outflow*, 2019, *Astrophys. J. (Lett.)*, 882, L10
16. Ahlgren, B., Larsson, J., Valan, V., Mortlock, D., Ryde, F., & **Pe'er, A.**, *Investigating subphotospheric dissipation in gamma-ray bursts using joint Fermi-Swift observations*, 2019, *Astrophys. J.*, 880, 76
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