

## CURRICULUM VITAE

NAME: Ethan Tecumseh Vishniac

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PERSONAL DATA:

Date of Birth: September 29, 1955  
Citizenship: USA

EDUCATION:

B.S.: Astronomy and Physics, University of Rochester	1976
B.A.: Applied Mathematics, University of Rochester	1976
M.A.: Astronomy, Harvard University	1980
Ph.D.: Astronomy, Harvard University	1980

CURRENT EMPLOYMENT:

Editor in Chief, Editor in Chief of the AAS Journals  
Research Professor, Department of Physics and Astronomy (Johns Hopkins University)

PROFESSIONAL ORGANIZATIONS:

American Astronomical Society  
Nominating Committee, Member 1997-2000  
Warner/Pierce Prize Committee, Member 1994-1997

American Physical Society  
Executive Committee (elected); Topical Interest Group in Plasma Astrophysics 2001-2004

EMPLOYMENT HISTORY:

1980-1982	Research Assistant, Department of Astrophysical Sciences, Princeton University
1982-1984	Lecturer; Department of Astronomy, University of Texas at Austin
1984-1988	Assistant Professor, Department of Astronomy, University of Texas at Austin
1988-1993	Associate Professor (tenured), Department of Astronomy, University of Texas at Austin
1993-1998	Professor, Department of Astronomy, University of Texas at Austin

1997-1998 Visiting Professor, Department of Physics, Massachusetts Institute of Technology  
 1998-2007 Professor, Department of Physics and Astronomy, Johns Hopkins University  
 1999-2002 Director, Center for Astrophysical Sciences, Johns Hopkins University  
 2007-2012 Professor, Department of Physics and Astronomy, McMaster University  
 2012-2015 Professor, Department of Physics and Engineering Physics, The University of Saskatchewan  
 2015- Editor in Chief, The AAS Journals  
 2015- Research Professor, The Johns Hopkins University

ORGANIZATION OF SCIENTIFIC MEETINGS:

1990 Disk Days, Austin, Texas - Chair, Organizing Committee  
 1993 Workshop on Interacting Binary Stars (Astronomical Society of the Pacific), San Diego, California - Scientific Organizing Committee  
 2002 Ringberg Workshop on Astro-Plasma Physics, Munich, German - Scientific Organizing Committee  
 2006 Harry Petschek Symposium on Magnetic Reconnection, College Park, Maryland -Scientific Organizing Committee  
 2007 Topical Session of the 210<sup>th</sup> Meeting of the American Astronomical Society “Turbulence in Diffuse Astrophysical Environments” - Organizer  
 2008 Magnetic Fields in the Universe II: From Laboratory and Stars to the Primordial Universe, Cozumel, Mexico - Scientific Organizing Committee  
 2011 6<sup>th</sup> Korean Astrophysics Workshop on Fundamental Processes of Astrophysical Turbulence, Pohang, Korea – Scientific Organizing Committee  
 2014 Workshop “Turbulence: In the Sky as on the Earth”, International Institute of Physics (IIP), Natal, Brazil, October 6th -16th

EDITORIAL ACTIVITIES:

1995-1997 Divisional Associate Editor, Physical Review Letters  
 1997-2004 Science Editor, The Astrophysical Journal  
 2003- Associate Editor, The Journal of Turbulence  
 2004-2006 Associate Editor-in-Chief, The Astrophysical Journal  
 2006-2015 Editor-in-Chief, The Astrophysical Journal  
 2015- Editor-in-Chief, The AAS Journals

REFEREEING AND REVIEWS:

Journals (lower limits only):

Annals of Physics – in excess of 2 papers  
 Astronomy and Astrophysics – in excess of 10 papers  
 Astroparticle Physics – in excess of 1 paper  
 The Astrophysical Journal – in excess of 81 papers (exclusive of editorial duties)  
 The Astrophysical Journal Letters – in excess of 26 papers  
 European Physical Journal – at least once  
 Geophysical and Astrophysical Fluid Dynamics – in excess of 3 papers  
 Monthly Notices of the Royal Astronomical Society – in excess of 17 papers  
 Nature – in excess of 11 papers  
 Nonlinear Processes in Geophysics – at least once  
 Physical Review D – in excess of 62 papers  
 Physical Review Letters – in excess of 104 (may include some editorial cases)  
 Physics Letters A – at least once  
 Physics of Plasmas – in excess of 4 papers  
 Proceedings of the Astronomical Society of Japan – in excess of 4 papers

**Foundations:**

Alfred P. Sloan Foundation – member of the advisory committee on Sloan Research Foundation Fellowships in Physics 2009-2015.

**Funding Agencies:**

Department of Energy (USA):

INCITE review panels in 2009, 2010, 2011

National Science Foundation (USA):

Review Panels in 2000, 2002, 2004 and 2009

29 individual grant reviews

National Aeronautics and Space Administration (USA):

Review Panels in 1999 and 2001 (Astrophysics Theory Program)

7 individual grant reviews

Miscellaneous: Occasional grant reviews for U.S. Civilian Research and

Development Foundation for the Independent States of the Former Soviet Union (3),

CalSpace (2), Israeli Science Foundation, and the Research Grants Council of Hong Kong

**AREAS OF RESEARCH INTEREST:**

- a) Magnetic Reconnection
- b) Astrophysical Dynamos
- c) Magnetohydrodynamic Turbulence
- d) Shock Wave Instabilities
- e) Early Universe
- f) Cosmic Microwave Background

**HONOURS:**

Presidential Young Investigator – National Science Foundation (USA)	1985
Alfred P. Sloan Fellow	1986
Helen P. Warner Prize - American Astronomical Society	1990
Fellow of the American Physical Society	2002

**COURSES TAUGHT (last five years):**

The University of Saskatchewan:

Spring 2013 Astronomy 103 Introduction to Stellar Astronomy (undergraduate)

Spring 2014 Astronomy 103 Introduction to Stellar Astronomy (undergraduate)

Johns Hopkins University:

Fall 2017 Physics 172.633 Language of Astrophysics (graduate)

Spring 2018 Physics 171.611 Stellar Structure (graduate)

**SUPERVISORSHIPS:**

Doctoral:

- 1987 Seok Jae Park
- 1988 Dongsu Ryu
- 1989 Gary Bust
- 1990 Hugh Harleston Lopez-Espino
- 1992 Jai-chan Hwang
- 1992 Hye Rim Noh
- 1992 Insu Yi
- 1993 Min Huang

1994 Suhail Farooqui  
 1994 Shan Luo  
 1998 Dian Curran  
 2000 Pin-Gao Gu  
 2000 Jungyeon Cho  
 2010 Dmytro Shapovalov  
 2015 Benjamin Jackel  
 2017 Amir Jafari

RESEARCH FUNDING (last five years):

<u>Date</u>	<u>Source</u>	<u>Amount</u>	<u>Purpose</u>
2012-2017	National Science & Engineering Research Council (Canada) - (I abandoned this grant when I left Canada in June 2015)	51,000/annum	Magnetic Field Evolution in Astrophysics

PUBLICATIONS:

Peer Reviewed Journal Articles

Vishniac, E. T., 1978, "A necessary condition for equilibrium in stellar systems with a continuous mass spectrum", ApJ, 223, 986-990

Press, W. H. and Vishniac, E. T., 1979, "Production of new cosmological perturbations during the radiation-dominated ERA", Natur, 279, 137-139

Press, W. H. and Vishniac, E. T., 1980, "Propagation of adiabatic cosmological perturbations through the ERA of matter-radiation decoupling", ApJ, 236, 323-334

Press, W. H. and Vishniac, E. T., 1980, "Tenacious myths about cosmological perturbations larger than the horizon size", ApJ, 239, 1-11

Vishniac, E. T., 1982, "Nonlinear effects on cosmological perturbations. I - The evolution of adiabatic perturbations. II - The production of isothermal perturbations by a primordial sound spectrum", ApJ, 253, 446-469

Vishniac, E. T., 1982, "Nonlinear Effects on Cosmological Perturbations - Part Two - the Production of Isothermal Perturbations by a Primordial Sound Spectrum", ApJ, 253, 457-

Vishniac, E. T., 1982, "Relativistic collisionless particles and the evolution of cosmological perturbations", ApJ, 257, 456-472

Vishniac, E. T., 1983, "Why weakly non-linear effects are small in a zero-pressure cosmology", MNRAS, 203, 345-349

Vishniac, E. T., 1983, "The dynamic and gravitational instabilities of

spherical shocks", ApJ, 274, 152-167

Vishniac, E. T., 1983, "Entropy generation and limits on the anisotropy of the early universe", MNRAS, 205, 675-681

Vishniac, E. T., Ostriker, J. P., and Bertschinger, E., 1985, "Explosions in the early universe", ApJ, 291, 399-416

Olive, K. A., Seckel, D., and Vishniac, E., 1985, "Recent heavy-particle decay in a matter-dominated universe", ApJ, 292, 1-11

Ostriker, J. P. and Vishniac, E. T., 1986, "Generation of microwave background fluctuations from nonlinear perturbations at the ERA of galaxy formation", ApJ, 306, L51-L54

Ostriker, J. P. and Vishniac, E. T., 1986, "Effect of gravitational lenses on the microwave background, and 1146+111B,C", Natur, 322, 804-

Vishniac, E. T., Olive, K. A., and Seckel, D., 1987, "Cosmic strings and inflation.", NuPhB, 289, 717-734

Thompson, K. L. and Vishniac, E. T., 1987, "The effect of spherical voids on the microwave background radiation", ApJ, 313, 517-522

Ryu, D. and Vishniac, E. T., 1987, "The growth of linear perturbations of adiabatic shock waves", ApJ, 313, 820-841

Vishniac, E. T. and Bust, G. S., 1987, "Were the Lyman-alpha clouds formed from shocks?", ApJ, 319, 14-27

Vishniac, E. T., 1987, "Reionization and small-scale fluctuations in the microwave background", ApJ, 322, 597-604

Ryu, D. and Vishniac, E. T., 1988, "A linear stability analysis for wind-driven bubbles", ApJ, 331, 350-358

Ponce, G. A. and Vishniac, E. T., 1988, "Cosmic string shocks and microwave spectral distortions", ApJ, 332, 57-66

- Park, S. J. and Vishniac, E. T., 1988, "The evolution of the central black hole in an active galactic nucleus. I - Evolution with a constant mass influx", *ApJ*, 332, 135-140
- Chiang, W.-H., Ryu, D., and Vishniac, E. T., 1988, "A model for the evolution of the intergalactic medium", *PASP*, 100, 1386-1392
- Ryu, D., Vishniac, E. T., and Chiang, W.-H., 1989, "A model for the distribution of dark matter, galaxies, and the intergalactic medium in a cold dark matter-dominated universe", *NYASA*, 571, 228-238
- Park, S. J. and Vishniac, E. T., 1989, "An axisymmetric nonstationary model of the central engine in an active galactic nucleus. I - Black hole electrostatics", *ApJ*, 337, 78-83
- Vishniac, E. T. and Ryu, D., 1989, "On the stability of decelerating shocks", *ApJ*, 337, 917-926
- Holcomb, K. A., Park, S. J., and Vishniac, E. T., 1989, "Formation of a 'child' universe in an inflationary cosmological model", *PhRvD*, 39, 1058-1066
- Chiang, W.-H., Ryu, D., and Vishniac, E. T., 1989, "Evolution of the intergalactic medium in a cold dark matter-dominated universe", *ApJ*, 339, 603-618
- Vishniac, E., 1989, "Cosmology - Making Light of Gravity", *Natur*, 339, 579-
- Hwang, J.-C., Vishniac, E. T., and Shapiro, P. R., 1989, "The gravitational instability of collisionless particles in a cosmological self-similar shell", *ApJ*, 346, 12-27
- Vishniac, E. T. and Diamond, P., 1989, "A self-consistent model of mass and angular momentum transport in accretion disks", *ApJ*, 347, 435-447
- Park, S. J. and Vishniac, E. T., 1989, "An axisymmetric, nonstationary model of the central engine in an active galactic nucleus. II - Accretion disk electrostatics", *ApJ*, 347, 684-687
- Hwang, J.-C. and Vishniac, E. T., 1990, "Analyzing cosmological perturbations using the covariant approach", *ApJ*, 353, 1-20
- Park, S. J. and Vishniac, E. T., 1990, "The evolution of the central black hole in an active galactic nucleus. II - Evolution with an exponentially decreasing mass influx", *ApJ*, 353, 103-107

- Ryu, D., Vishniac, E. T., and Chiang, W.-H., 1990, "A model for the distribution of the intergalactic medium", *ApJ*, 354, 389-399
- Vishniac, E. T., 1990, "The growth rate of a dipole disturbance in an Einstein-De Sitter universe", *ApJ*, 359, 1-3
- Park, S. J. and Vishniac, E. T., 1990, "An axisymmetric, nonstationary electrodynamic model of the central engine in an active galactic nucleus.", *NCimB*, 105, 907-920
- Vishniac, E. T., Jin, L., and Diamond, P., 1990, "Dynamo action by internal waves in accretion disks", *ApJ*, 365, 648-659
- Insu, Y., Vishniac, E. T., and Mineshige, S., 1991, "Generation of non-Gaussian fluctuations during chaotic inflation.", *PhRvD*, 43, 362-368
- Yi, I., Vishniac, E. T., and Mineshige, S., 1991, "Generation of non-Gaussian fluctuations during chaotic inflation", *PhRvD*, 43, 362-368
- Ryu, D. and Vishniac, E. T., 1991, "The dynamic instability of adiabatic blast waves", *ApJ*, 368, 411-425
- Duncan, R. C., Vishniac, E. T., and Ostriker, J. P., 1991, "Expansion-cooled Lyman-alpha clouds", *ApJ*, 368, L1-L5
- Park, S. J. and Vishniac, E. T., 1991, "Are hypernovae detectable?", *ApJ*, 375, 565-567
- Vishniac, E. T., 1991, "A model for variability of AGN", *PASP*, 103, 886-
- Vishniac, E. T., Jin, L., and Diamond, P. H., 1991, "Dyamos and angular momentum transport in accretion disks", *PhFIB*, 3, 2374-2378
- Lightman, A., Brawer, R., and Vishniac, E. T., 1991, "Origins: The Lives and Worlds of Modern Cosmologists", *AmJPh*, 59, 861-861
- Hwang, J.-C. and Vishniac, E. T., 1991, "Gauge-invariant joining conditions for cosmological perturbations", *ApJ*, 382, 363-368
- Noh, H., Vishniac, E. T., and Cochran, W. D., 1991, "Gravitational instabilities in a proto-planetary disk", *ApJ*, 383, 372-379
- Yi, I. and Vishniac, E. T., 1992, "Stochastic Scaling Effect and Statistics of Cosmological Density Fluctuations", *PKAS*, 7, 51-61

Yi, I., Kim, S.-W., Vishniac, E. T., and Wheeler, J. C., 1992, "Disk instability and the time-dependent X-ray emission from the intermediate polar GK Persei", *ApJ*, 391, L25-L28

Insu, Y. and Vishniac, E. T., 1992, "Scaling solution for cosmological fluctuations and large-scale structure.", *PhRvD*, 45, 3441-3446

Yi, I. and Vishniac, E. T., 1992, "Scaling solution for cosmological fluctuations and large-scale structure", *PhRvD*, 45, 3441-3446

Harleston, H. and Vishniac, E. T., 1992, "Numerical treatment of the spherically symmetric general-relativistic Boltzmann equation for massless and massive particles", *PhRvD*, 45, 4458-4472

Noh, H., Vishniac, E. T., and Cochran, W. D., 1992, "An examination of the  $M = 1$  instability in a low-mass protoplanetary disk", *ApJ*, 397, 347-352

Vishniac, E. T. and Diamond, P., 1992, "Local magnetohydrodynamic instabilities and the wave-driven dynamo in accretion disks", *ApJ*, 398, 561-568

Yi, I. and Vishniac, E. T., 1993, "Inflationary stochastic dynamics and the statistics of large-scale structure", *ApJS*, 86, 333-364

Yi, I. and Vishniac, E. T., 1993, "Stochastic analysis of the initial condition constraints on chaotic inflation", *PhRvD*, 47, 5280-5294

Yi, I. and Vishniac, E. T., 1993, "Scalar field quantum fluctuations and fine-tuning in chaotic inflationary models", *PhRvD*, 47, 5295-5303

Yi, I. and Vishniac, E. T., 1993, "Simple estimate of the statistics of large scale structure", *PhRvD*, 48, 950-953

Luo, S. and Vishniac, E. T., 1993, "Can Extra Power Explain Periodicity on Large Scales?", *ApJ*, 415, 450-

Park, S. J. and Vishniac, E. T., 1993, "Evolution of Active Galactic Nuclei based on the Unified Theory", *PKAS*, 8, 179-183

Zhang, W., Diamond, P. H., and Vishniac, E. T., 1994, "Dynamics of the magnetic shearing instability and magnetohydrodynamic turbulence in accretion disks. 1: Vertical magnetic field", *ApJ*, 420, 705-720

Park, S. J. and Vishniac, E. T., 1994, "An upper limit to the electrodynamic power output from a thin accretion disk around a black hole", *ApJ*, 426, 131-134



- Vishniac, E. T., 1994, "Nonlinear instabilities in shock-bounded slabs", ApJ, 428, 186-208
- Noh, H., Vishniac, E. T., and Cochran, W. D., 1994, "Gravitational instabilities in a proto-planetary disk including the effects of magnetic fields", ApJ, 428, 275-283
- Yi, I. and Vishniac, E. T., 1994, "The hard X-ray emission spectra from accretion columns in intermediate polars", ApJ, 435, 829-839
- Vishniac, E. T., 1995, "A Model for the Distribution of Magnetic Flux in High Beta MHD Turbulence", LNP, 462, 265-
- Vishniac, E. T., 1995, "Linear and Nonlinear Waves in Shock-Bounded Slabs", NYASA, 773, 70-79
- Luo, S. and Vishniac, E., 1995, "Three-dimensional shape statistics: Methodology", ApJS, 96, 429-460
- Luo, S. and Vishniac, E., 1995, "Bayesian approaches to testing the nature of primordial density fluctuation", ApJ, 443, 469-478
- Vishniac, E. T., 1995, "The Dynamics of Flux Tubes in a High- beta Plasma. I. A General Description", ApJ, 446, 724- 740
- Vishniac, E. T., 1995, "The Dynamics of Flux Tubes in a High- beta Plasma. II. Buoyancy in Stars and Accretion Disks", ApJ, 451, 816- 824
- Vishniac, E. T. and Zhang, C., 1996, "The Growth Rate of Tidally Excited Waves in Accretion Disks", ApJ, 461, 307- 319
- Ryu, D., Goodman, J., and Vishniac, E. T., 1996, "Global Aspects of Elliptical Instability in Tidally Distorted Accretion Disks", ApJ, 461, 805- 811
- Luo, S., Vishniac, E. T., and Martel, H., 1996, "Three-dimensional Shape Statistics: Applications", ApJ, 468, 62- 74
- Park, S. J. and Vishniac, E. T., 1996, "The Variability of Active Galactic Nuclei and the Radial Transport of Vertical Magnetic Flux", ApJ, 471, 158- 163
- Vishniac, E. T. and Wheeler, J. C., 1996, "The Speed of Cooling Fronts and the Functional Form of the Dimensionless Viscosity in Accretion Disks", ApJ, 471, 921- 929

- Vishniac, E. T. and Brandenburg, A., 1997, "An Incoherent  $\alpha$  -  $\Omega$  Dynamo in Accretion Disks", ApJ, 475, 263- 274
- Vishniac, E. T. and Zhang, C., 1997, "The Growth Rate of Tidally Excited Waves in Accretion Disks: Erratum", ApJ, 477, 516- 517
- Valinia, A., Shapiro, P. R., Martel, H., and Vishniac, E. T., 1997, "Gravitational Instability in Collisionless Cosmological Pancakes", ApJ, 479, 46- 69
- Yi, I., Wheeler, J. C., and Vishniac, E. T., 1997, "Torque Reversal in Accretion-powered X-Ray Pulsars", ApJ, 481, L51- L54
- Vishniac, E. T., 1997, "The Structure of Cooling Fronts in Accretion Disks", ApJ, 482, 414- 419
- Yi, I., Wheeler, J. C., and Vishniac, E. T., 1997, "Torque Reversal in Accretion-powered X-Ray Pulsars: Erratum", ApJ, 491, L93- L93
- Vishniac, E. T. and Lazarian, A., 1999, "Reconnection in the Interstellar Medium", ApJ, 511, 193-203
- Yi, I. and Vishniac, E. T., 1999, "Spectral Transition and Torque Reversal in X-Ray Pulsar 4U 1626-67", ApJ, 516, L87-L90
- Lazarian, A. and Vishniac, E. T., 1999, "Reconnection in a Weakly Stochastic Field", ApJ, 517, 700-718
- Gu, P.-G., Vishniac, E. T., and Cannizzo, J. K., 2000, "Thermal Equilibrium Curves and Turbulent Mixing in Keplerian Accretion Disks", ApJ, 534, 380-397
- Cho, J. and Vishniac, E. T., 2000, "The Generation of Magnetic Fields through Driven Turbulence", ApJ, 538, 217-225
- Cho, J. and Vishniac, E. T., 2000, "The Anisotropy of Magnetohydrodynamic Alfvénic Turbulence", ApJ, 539, 273-282
- Vishniac, E. T. and Cho, J., 2001, "Magnetic Helicity Conservation and Astrophysical Dynamos", ApJ, 550, 752-760
- Cho, J., Lazarian, A., and Vishniac, E. T., 2002, "Simulations of Magnetohydrodynamic Turbulence in a Strongly Magnetized Medium", ApJ, 564, 291-301
- Cho, J., Lazarian, A., and Vishniac, E. T., 2002, "New Regime of Magnetohydrodynamic Turbulence: Cascade below the Viscous Cutoff", ApJ, 566, L49-L52

- Cho, J., Lazarian, A., and Vishniac, E. T., 2003, "MHD Turbulence: Scaling Laws and Astrophysical Implications", LNP, 614, 56-98
- Vishniac, E. T., Lazarian, A., and Cho, J., 2003, "Problems and Progress in Astrophysical Dynamos", LNP, 614, 376-401
- Cho, J., Lazarian, A., and Vishniac, E. T., 2003, "Ordinary and Viscosity-damped Magnetohydrodynamic Turbulence", ApJ, 595, 812-823
- Cannizzo, J. K., Gehrels, N., and Vishniac, E. T., 2004, "A Numerical Gamma-Ray Burst Simulation Using Three-Dimensional Relativistic Hydrodynamics: The Transition from Spherical to Jetlike Expansion", ApJ, 601, 380-390
- Lazarian, A., Vishniac, E. T., and Cho, J., 2004, "Magnetic Field Structure and Stochastic Reconnection in a Partially Ionized Gas", ApJ, 603, 180-197
- Gu, P.-G., Lin, D. N. C., and Vishniac, E. T., 2004, "Drag Instability", Ap&SS, 292, 261-265
- Araya-G&ocute;chez, R. A. and Vishniac, E. T., 2004, "Radiative heat conduction and the magnetorotational instability", MNRAS, 355, 345-351
- Smith, M. A., Henry, G. W., and Vishniac, E., 2006, "Rotational and Cyclical Variability in  $\gamma$  Cassiopeia", ApJ, 647, 1375-1386
- Kennicutt, R. C., Jr., Vishniac, E., and Sneden, C., 2006, "Professional and Ethical Standards for the AAS Journals", ApJ, 652, 847-848
- Sneden, C., Kennicutt, R. C., Jr., and Vishniac, E., 2006, "Professional and Ethical Standards for the AAS Journals", ApJ, 652, L69-L70
- Kennicutt, R. C., Jr., Vishniac, E., and Sneden, C., 2006, "Professional and Ethical Standards for the AAS Journals", ApJS, 167, 101-102
- Vishniac, E. T., 2007, "Editorial Transitions 2007", ApJ, 654, 1-1
- Cannizzo, J.K., Gehrels, N. and Vishniac, E.T., 2008, "Glimm's method for relativistic hydrodynamics", ApJ, 680, 885-896
- Cho, J., Vishniac, E.T., Beresnyak, A., Lazarian, A., and Ryu, D., 2009, "Growth of Magnetic Fields Induced by Turbulent Motions", ApJ, 693, 1449-1461
- Vishniac, E.T. 2009, "The Saturation Limit of the Magnetorotational Instability", ApJ, 696, 1021-1028

- Kowal, G., Lazarian, A., Vishniac, E.T. , and Otmianowska-Mazur, K. 2009, “Numerical Tests of Fast Reconnection in Weakly Stochastic Magnetic Fields”, *ApJ*, 700, 63-85
- Kulpa-Dybel, K., Kowal, G., Otmianowska-Mazur, K., Lazarian, A., & Vishniac, E.T. 2010, “Reconnection in weakly stochastic B-fields in 2D”, *Astronomy and Astrophysics*, 514, id.A 26
- Pang, Bijia, Pen, Ue-Li, & Vishniac, Ethan T., 2010 “Fast Magnetic Reconnection in Three-Dimensional Magnetohydrodynamic Simulations”, *Physics of Plasmas*, 17, 102302-102302-9
- Shapovalov, Dmitry S., & Vishniac, Ethan T., 2011 “Simulations of Turbulent Dynamos Driven by the Magnetic Helicity Flux”, *ApJ*, 738, 66 (article ID #)
- Eyink, Gregory L., Lazarian, Alex, & Vishniac, Ethan T., 2011, “Fast Magnetic Reconnection and Spontaneous Stochasticity”, *ApJ* 741, 51
- Lazarian, A., Eyink, G.L. & Vishniac, E.T. 2012, “Relation of astrophysical turbulence and magnetic reconnection”, *Ph.Pl.* 19, 012105-012105-8
- Kowal, G, Lazarian, A., Vishniac, E.T. & Otmianowska-Mazur, K. 2012, “Reconnection studies under different types of turbulence driving”, *NPGeo* 19, 297-314
- Vishniac, E.T., Pillsworth, S., Eyink, G., Kowal, G, Lazarian, A. & Murray, S. 2012, “Reconnection current sheet structure in a turbulent medium”, *NPGeo* 19, 605-610
- Eyink, Gregory, Vishniac, Ethan, Lalescu, Cristian, Aluie, Hussein, Kanov, Kalin, Bürger, Kai, Burns, Randal, Meneveau, Charles & Szalay, Alexander 2013, “Flux-freezing breakdown in high-conductivity magnetohydrodynamic turbulence”, *Nature* 497, 466-469
- Vishniac, E.T. & Shapovalov, D. 2014, “Properties of Magnetic Helicity flux in turbulent dynamos”, *ApJ* 780, 144
- Lalescu, Cristian C., Shi, Yi-Kang, Eyink, Gregory L., Drivas, Theodore D, Vishniac, Ethan T., & Lazarian, Alexander 2015, “Inertial Range Reconnection in Magnetohydrodynamic Turbulence and in the Solar Wind”, *Phys. Rev Lett* 115, id 025001
- Lazarian, Alex, Eyink, Gregory L., Vishniac, Ethan T., and Kowal, Grzegorz 2015, “Magnetic Reconnection in Astrophysical Environments”, *ASSL*, 407, 311
- Kowal, Grzegorz, Falceta-Gonçalves, Diego A., Lazarian, Alex, and Vishniac, Ethan T. 2017, “Statistics of Reconnection-Driven Turbulence”, *ApJ*, 838, 91
- Jafari, Amir, and Vishniac Ethan T. 2018, “Magnetic Field Transport in Accretion Disks”, *ApJ*, 854, 2

## Other, Including Proceedings of Meetings

Vishniac, E., 1986, "The shape of large scale structure in the universe.", Inner space/outer space. The interface between cosmology and particle physics, pp. 190-193

Ryu, D., Vishniac, E. T., and Chiang, W.-H., 1989, "Cold Dark Matter with Gas", Particle Astrophysics: Forefront Experimental Issues. Proceedings of a Workshop, held in Berkeley, CA, December 8-10, 1988. Edited by Eric B. Norman. Singapore: World Scientific Publ., 1989., p.94

Ryu, D., Vishniac, E. T., and Chiang, W.-H., 1989, "A model for the distribution of dark matter, galaxies, and the intergalactic medium in a cold dark matter - dominated universe.", 14th. Texas Symposium on Relativistic Astrophysics, p. 228 - 238

Holcomb, K. A., Park, S. J., and Vishniac, E. T., 1989, "The Formation of a 'child' Universe in an Inflationary Cosmological Model", General Relativity and Gravitation, proceedings of the 12th International Conference on General Relativity and Gravitation, held July 2-8, 1989, in Boulder, Colorado, USA, under the auspices of the International Society on General Relativity and Gravitation, 1989, p.635

Vishniac, E. T., Jin, L., and Diamond, P., 1991, "The origin of viscosity in thin accretion disks.", Symposium in Celebration of the 50. Anniversary of McDonald Observatory of the University of Texas at Austin: Frontiers of stellar evolution, p. 625

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#### Invited Colloquia and Seminars (last five years)

February 2012 “Magnetic Helicity and the Rapid Growth of Large Scale Magnetic Fields” – Colloquium At The University of Saskatchewan, Saskatoon, SK

April 2012 “Turbulent Magnetic Helicity Transport and the Rapid Growth of Large Scale Magnetic Fields” - Invited talk at Midwestern Magnetic Fields 2012, Madison WI

April 2012 “Theory and Simulations of Reconnection in 3D Turbulence” – Invited talk at the Center for

Magnetic Self-Organization Workshop, Madison WI

- November 2012 “Spontaneous Stochasticity, Fast Reconnection, and the Failure of Flux-Freezing in Magnetized Turbulence” – Applied Math Colloquium at The University of Saskatchewan, Saskatoon SK
- February 2013 “Magnetic Helicity Conservation and the Dynamo Process” – Invited talk at Magnetic Fields in the Universe IV, Playa Del Carmen, Mexico
- May 2013 “The Magnetic Environment of Black Holes” – Invited talk at Black Holes IX, Saskatoon SK
- July 2013 “Reconnection and Diffusion in Turbulent Media” – Invited talk at “Festival de Theorie” in Aix-en-Provence, France
- August 2013 “Reconnection and Diffusion in Turbulent Media” – Invited talk at “TeV Jets: Astrophysical Particle Acceleration”, Santa Fe, NM
- November 2013 “Solar Rotation and the Dynamo Problem” – Invited talk at “400 Years of Stellar Rotation”, Natal Brazil
- February 2014 “The Dynamics of Large Scale Magnetic Fields” – Prairie Seminars at The University of Manitoba, The University of Winnipeg, and Brandon University
- February 2014 “The Dynamics of Large Scale Magnetic Fields” – Seminar at the Institute for Advanced Study, Princeton NJ
- May 2014 “Driving the dynamo via magnetic helicity flux: how differential rotation makes large scale magnetic fields” – Colloquium at The University of Colorado at Boulder
- October 2014 “Turbulence and the Magnetic Dynamo” invited review talk for a workshop “Turbulence: In the Sky as on the Earth”, International Institute of Physics (IIP), Natal, Brazil
- October 2014 “Magnetic Helicity and the Galactic Dynamo” invited talk at “Cosmic Magnetic Fields: current knowledge and the future ideas”, CMF Krakow.
- February 2015 “Driving the dynamo via magnetic helicity flux: how differential rotation makes large scale magnetic fields” invited seminar at Johns Hopkins University
- May 2015 “Turbulent Dynamos: How I learned to ignore kinematic dynamo theory” invited talk at Midwestern Magnetic Fields 2015, U. Wisconsin
- October 2015 “Turbulent Dynamos: How I learned to ignore kinematic dynamo theory” invited talk at Magnetic Fields in the Universe V, Corsica, France
- November 2015 “Disk Dynamos: Understanding the Origin of Galactic Magnetic Fields” Tinsley Lecture at The University of Texas at Austin
- December 2015 “Magnetic Helicity Flux and Large Scale Dynamos” invited talk at a workshop on dynamo theory at PICTS, Princeton University
- February 2016 “Turbulent Dynamos: How I learned to ignore kinematic dynamo theory” seminar at the Institute for Theory and Computing, Center for Astrophysics, Harvard U.



April 2016 “Turbulent Dynamos: How I learned to ignore kinematic dynamo theory” seminar at Northwestern University

September 2016 “Turbulent Dynamos in Stars: How I learned to ignore kinematic dynamo theory” colloquium at The University of Rochester