CURRICULUM VITAE

NAME:	Ethan Tecumseh Vishniac
ADDRESS:	
Home:	200 Westway Baltimore MD 21212
Business:	Department of Physics and Astronomy Johns Hopkins University Baltimore MD 21218
CONTACT:	Home: 410 303 5854 Business: 410 516 6021 Email: ethan.vishniac@aas.org
PERSONAL DATA:	

Date of Birth:September 29, 1955Citizenship: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, 1	Princeton V	University
				,		2

- 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 210th 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 6th 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 A	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	d) Shock Wave Instabilities
1 \	A - 1 - 1 B	

- b) Astrophysical Dynamos e) Early Universe
- c) Magnetohydrodynamic Turbulence 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 2013Astronomy 103 Introduction to Stellar Astronomy (undergraduate)Spring 2014Astronomy 103 Introduction to Stellar Astronomy (undergraduate)Johns Hopkins University:Fall 2017Fall 2017Physics 172.633 Language of Astrophysics (graduate)Spring 2018Physics 171.611 Stellar Structure (graduate)

SUPERVISORSHIPS:

Doctoral:

1987 Seok Jae Park 1988 Dongsu Ryu 1989 Gary Bust Hugh Harleston Lopez-Espino 1990 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):

Date	Source	<u>Amount</u>	Purpose
2012-2017	National Science & Engineering Research	51,000/annun	n Magnetic Field Evolution in
	Council (Canada)		Astrophysics
	(Labordonad this grant when I left Can	do in Juno 201	5)

- (I abandoned this grant when I left Canada in June 2015)

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 electrodynamics", 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 electrodynamics", 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, "Dynamos 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-Gó 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 γ 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

Yi, I., Vishniac, E. T., and Mineshige, S., 1991, "On the generation of non-Gaussian fluctuations during chaotic inflation.", ASSL "IUPAP Conference on Primordial Nucleosynthesis and Evolution of Early Universe", 169, p. 589 - 590

Vishniac, E. T., Jin, L., and Diamond, P. H., 1991, "Dynamo Action by Internal Waves in Accretion Disks.", Structure and Emission Properties of Accretion Disks, Proceedings of IAU Colloq. 129, the 6th Institute d'Astrophysique de Paris (IAP) Meeting, held in Paris, France, 2-6 July, 1990. Edited by C. Bertout, S. Collin-Souffrin, and J. P. Lasota. Gif-sur-Yvette: Editions Frontieres, 1991., p.223

Huang, M. and Vishniac, E. T., 1993, "Linear Waves in a Non-Magnetic Thin Disk", Cataclysmic Variables and Related Physics, 2nd Technion Haifa Conference. Edited by O. Regev and Giora Shaviv. Annals of the Israel Physical Society, Volume 10. Bristol: Institute of Physics Pub.; Jerusalem: Israel Physical Society; New York: American Institute of Physics, 1993., p.291

Vishniac, E. T., Luo, S., and Diamond, P., 1993, "The Linear Theory of Convective Instabilities in Accretion Disks ", Rev. Mex. Astron. Astrofis., 27, 224

Vishniac, E. T. and Duncan, R. C., 1994, "Dynamics of flux tubes in accretion disks", In Lunar and Planetary Inst., Workshop on Physics of Accretion Disks Around Compact and Young Stars p 10-11 (SEE N94-31116 09-90)

Vishniac, E. T., 1995, "Magnetohydrodynamic Turbulence in Accretion Disks (Invited paper)", Revista Mexicana de Astronomia y Astrofísica Serie de Conferencias, Vol. 3, The Fifth Mexico-Texas Conference on Astrophysics: Gaseous Nebulae and Star Formation, Tequesquitengo, Mor., Mexico, April 3-5, 1995, p. 69

Vishniac, E. T., 1998, "Disk Instabilities and Cooling Fronts", Accretion Processes in Astrophysical Systems: Some Like it Hot! Eighth Astrophysics Conference, College Park, MD, October 1997. Edited by Stephen S. Holt and Timothy R. Kallman, AIP Conference Proceedings 431., p.437

Vishniac, E. T., 1999, "Galactic and Accretion Disk Dynamos", Magnetic Helicity in Space and Laboratory Plasmas: Geophysical Monograph 111. Edited by Michael R. Brown, Richard C. Canfield and Alexei A. Pevtsov. Published by the American Geophysical Union, Washington, DC USA, 1999, p.285

Vishniac, E. T. and Lazarian, A., 1999, "Fast Reconnection in a Weakly Stochastic Field", Plasma Turbulence and Energetic Particles in Astrophysics, Proceedings of the International Conference, Cracow (Poland), 5-10 September 1999, Eds.: Michał Ostrowski, Reinhard Schlickeiser, Obserwatorium Astronomiczne, Uniwersytet Jagielloński, Kraków 1999, p. 182-189.

Lazarian, A. and Vishniac, E., 2000, "Fast Reconnection of Magnetic Fields in Turbulent Fluids", Astrophysical Plasmas: Codes, Models, and Observations, Proceedings of the conference held in Mexico City, October 25-29, 1999, Eds. Jane Arthur, Nancy Brickhouse, and José Franco, Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias), Volume 9, p. 55-62

Vishniac, E., 2001, "Dynamos in Accretion Disks", In X-ray Emission from Accretion onto Black Holes, Proceedings of a joint workshop held by the Center for Astrophysics (Johns Hopkins University) and the Laboratory for High Energy Astrophysics (NASA/ Goddard Space Flight Center) in Baltimore, MD, June 20-23, 2001, Eds.: T. Yaqoob and J. H. Krolik, to be published electronically (http://www.pha.jhu.edu/groups/astro/workshop2001/)

Vishniac, E. T., 2002, "Magnetic Field Generation in Accretion Disks", Current high-energy emission around black holes, Proceedings of the 2nd KIAS Astrophysics Workshop, Korea Institute for Advanced Study, Seoul, Korea, 3-8 September 2001 Edited by Chang-Hwan Lee and Heon-Young Chang. Singapore: World Scientific Publishing, 2002, ISBN 9810248709, p.156

Cannizo, J. K., Gehrels, N., and Vishniac, E. T., 2004, "A GRB simulation using 3-D relativistic hydrodynamics", Cosmic explosions in three dimensions : asymmetries in supernovae and gamma-ray bursts. Edited by P. Hoflich, P. Kumar and J. C. Wheeler. Cambridge contemporary astrophysics series. Published by Cambridge, UK: Cambridge University Press, 2004, p.346

Vishniac, E., 2005, "The Magnetic Helicity Current in an Alpha-Omega Dynamo", The Magnetized Plasma in Galaxy Evolution, Proceedings of the conference held in Kraków, Poland, Sept. 27th - Oct. 1st, 2004, Edited by K. Chyży, K. Otmianowska-Mazur, M. Soida, and R.-J. Dettmar, Jagiellonian University, Kraków 2005, p. 177-184

Vishniac, E. T., 2005, "The Nonlinear α - Ω Dynamo", MAGNETIC FIELDS IN THE UNIVERSE: From Laboratory and Stars to Primordial Structures. AIP Conference Proceedings, Volume 784, pp. 3-15 (2005)

Hanisch, R. J., Steffen, J., Choudhury, S., Dilauro, T., Szalay, A., Vishniac, E., Ehling, T., Milkey, R., and Plante, R., 2007, "Digital Data Preservation and Curation: A Collaboration Among Libraries, Publishers, and the Virtual Observatory", Library and Information Services in Astronomy V: Common Challenges, Uncommon Solutions. ASP Conference Series, Vol. 377, proceedings of the conference held 18-21 June 2006 in Cambridge, Massachusetts, USA. Edited by Sandra Ricketts, Christina Birdie, and Eva Isaksson.,

p.29

Lazarian, A., Kowal, G., Vishniac, E., Kulpa-Dybel, K., & Otmianowska-Mazur, K. "2D and 3D Turbulent Magnetic Reconnection" in Highlights of Astronomy 15, 434-435 – Proceedings of the 2009 General Assembly of the International Astronomical Union

Kowal, G., Lazarian, A., Vishniac, E.T., & Otmianowska-Mazur, K. 2009 "Numerical Studies of Weakly Stochastic Magnetic Reconnection" Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 36, pp. 89-96

Lazarian, A. & Vishniac, E.T. 2009 "Model of Reconnection of Weakly Stochastic Magnetic Field and its Implications" Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 36, pp. 81-88

Lazarian, A., Kowal, G., Vishniac, E., & de Gouveia dal Pino, E. 2011, "Fast magnetic reconnection and energetic particle acceleration" Planetary and Space Science, 59, pp 537-546

Lazarian, A., Eyink, G., Vishniac, E., and Kowal, G. "Reconnection in Turbulent Astrophysical Fluids", proceedings of The 8th International Conference of Numerical Modeling of Space Plasma Flows (ASTRONUM 2013), ASP Conference Series, Vol. 488, Eds. Nikolai V. Pogorelov, Edouard Audit, and Gary P. Zank, San Francisco: Astronomical Society of the Pacific, 2014., p.23

Contributions to Books

Vishniac, E.T., and Diamond, P.H. "Angular Momentum Transfer in Low Mass Accretion Disks", in Accretion Disks in Compact Stellar Systems, ed. J.C. Wheeler (World Scientific Press: Singapore), 1993, p. 41-69

Cho, J., Lazarian, A., and Vishniac, E.T. "MHD Turbulence: Scaling Laws and Astrophysical Implications", in Turbulence and Magnetic Fields in Astrophysics, Lecture Notes in Physics Vol. 614, eds. E. Falgarone, T. Passot (Springer-Verlag: Berlin), 2003, p. 56-100

Vishniac, E.T., Lazarian, A., and Cho, J. "Problems and Progress in Astrophysical Dynamos", in Turbulence and Magnetic Fields in Astrophysics, Lecture Notes in Physics Vol. 614, eds. E. Falgarone, T. Passot (Springer-Verlag: Berlin), 2003, p. 376-401

Lazarian, A., Eyink, G.L., Vishniac, E.T., and Kowal, G. "Magnetic Reconnection in Astrophysical Environments", in Magnetic Fields in Diffuse Media, Astrophysics and Space Science Library, Vol. 407, eds. A. Lazarian, E.M. Gouveia dal Pino, C. Melioli (Springer-Verlag Berlin Heidelberg), 2015, p. 311

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