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Princeton University: A. B., Physics, 1983
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University of Colorado at Boulder: M.A., Physics, 1985; Ph.D., Physics, 1989
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Relevant Employment :

July 2007 –	Chair, Division of Physical Sciences, American Museum of Natural History
July 2005 –	Curator-in-Charge, Department of Astrophysics, American Museum of Natural History
July 2007 –	Curator, Department of Astrophysics, American Museum of Natural History
July 2007 –	Adjunct Professor, Department of Astronomy, Columbia University
July 2002 – June 2007	Associate Curator, Department of Astrophysics, American Museum of Natural History
July 2002 – June 2007	Adjunct Associate Professor, Department of Astronomy, Columbia University
May 1999 – June 2002	Assistant Curator, Department of Astrophysics, American Museum of Natural History
May 1999 – June 2002	Adjunct Assistant Professor, Department of Astronomy, Columbia University
Sept. 1995 – April 1999	Scientist, Max-Planck-Institut für Astronomie
January 1994 – August 1995	Research Associate, Department of Astronomy, Univ. of Illinois at Urbana-Champaign
September 1992 – August 1995	Research Associate, Department of Astronomy & Astrophysics, University of Chicago

January 1991 – August 1992	Research Associate, Center for Star Formation Studies, University of California at Berkeley
January 1989 – December 1990	National Research Council Postdoctoral Fellow, NASA Ames Research Center
September 1983 – December 1988	Research Assistant, Joint Institute for Laboratory Astrophysics, University of Colorado and National Bureau of Standards
Summer 1984	Programmer, Space Astronomy Laboratory, University of Wisconsin at Madison
Summer 1982	Undergraduate Research Fellow, Division of Geological and Planetary Sciences, California Institute of Technology

Professional Associations :	International Astronomical Union, American Astronomical Society, American Physical Society
Fields of Interest :	Structure of the Interstellar Medium and Molecular Clouds, Blast Waves, Star Formation, Circumstellar Nebulae, Planetary Impacts, Computational Gas Dynamics and Magnetohydrodynamics
Citizenship :	United States
Languages :	English (native), German (conversational), French (reading), Spanish (reading)

Ph. D. Dissertation

"Interactions of Massive Stars with the Interstellar Medium: Bow Shocks and Superbubbles," 1989, Department of Physics, University of Colorado at Boulder.

Scientific Papers in Refereed Journals

1. "Molecular Processes and Gravitational Collapse in Intergalactic Shocks," Mac Low, M.-M., and Shull, J. M. 1986, Astrophys. J., 302, 585–589.
2. "Merging of Vortices in the Atmosphere of Jupiter: An Analysis of Voyager Images," Mac Low, M.-M., and Ingersoll, A. P. 1986, Icarus, 65, 353–369.
3. "Superbubbles in Disk Galaxies," Mac Low, M.-M., and McCray, R. 1988, Astrophys. J., 324, 776–785.
4. "Superbubble Blowout Dynamics," Mac Low, M.-M., McCray, R., and Norman, M. L. 1989, Astrophys. J., 337, 141–154.
5. "Cometary Compact H II Regions are Stellar Wind Bow Shocks," Van Buren, D., Mac Low, M.-M., Wood, D. O. S., and Churchwell, E. 1990, Astrophys. J., 353, 570–578.
6. "X-Ray Emission From Colliding Stellar Winds," Luo, D., McCray, R., and Mac Low, M.-M. 1990, Astrophys. J., 362, 267–273.
7. "X-Rays From Superbubbles in the Large Magellanic Clouds," Chu, Y.-H., and Mac Low, M.-M. 1990, Astrophys. J., 365, 510–521.
8. "Bow Shock Models of Ultracompact H II Regions," Mac Low, M.-M., Van Buren, D., Wood, D. O. S., and Churchwell, E. 1991, Astrophys. J., 369, 395–409.
9. "Expansion of a Superbubble in a Uniform Magnetic Field," Ferrière, K. M., Mac Low, M.-M., and Zweibel, E. G. 1991, Astrophys. J., 375, 239–253.
10. "The Semicircular Shell of CTB 109," Wang, Z., Qu, Q., Luo, D., McCray, R., and Mac Low, M.-M. 1992, Astrophys. J., 388, 127–130.
11. "Water Masers in W49N–The Youngest Stellar Jet?," Mac Low, M.-M. and Elitzur, M. 1992, Astrophys. J. (Letters), 393, L33–L36.
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13. "Nonlinear Growth of Dynamical Overstabilities in Blast Waves," Mac Low, M.-M. and Norman, M. L. 1993, Astrophys. J., 407, 207–218.
14. "Hidden Supernova Remnants in the Large Magellanic Cloud H II Complex N44," Chu, Y.-H., Mac Low, M.-M., García-Segura, G., Wakker, B., and Kennicutt, R. C., Jr. 1993, Astrophys. J., 414, 213–218.
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17. "Two New Supernova Remnants in OB Associations in the Large Magellanic Cloud," Smith, R. C., Chu, Y.-H., Mac Low, M.-M., Oey, M. S., & Klein U. 1994, Astron. J., 108, 1266–1275.

18. "Shock Interactions with Magnetized Interstellar Clouds: I. Steady Shocks Hitting Nonradiative Clouds," Mac Low, M.-M., McKee, C. F., Klein, R. I., Stone, J. M., and Norman, M. L., 1994, Astrophys. J., 433, 757–777.

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22. "Collision of Comet Shoemaker-Levy 9 with Jupiter Observed by the NASA Infrared Telescope Facility," Orton, G. O., et al. 1995, Science, 267, 1277–1282.

23. "X-Rays from Superbubbles in the Large Magellanic Cloud. III. X-ray Dim Superbubbles," Chu, Y.-H., Chang, H.-W., Su, Y.-L., and Mac Low, M.-M. 1995, Astrophys. J., 450, 157.

24. "Sulfur Chemistry in the Wake of Comet Shoemaker-Levy 9," Zahnle, K., Mac Low, M.-M., Lodders, K., and Fegley, B., Jr. 1995, Geophys. Res. Lett., 22, 1593–1596.

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49. "Turbulent Velocity Structure in Molecular Clouds," Ossenkopf, V., & Mac Low, M.-M. 2002, Astron. Astrophys., 390, 307–326.

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51. "Mixing Time Scales in a Supernova-Driven Interstellar Medium," Avillez, M. A., & Mac Low, M.-M. 2002, Astrophys. J., 581, 1047–1060.

52. "Effects of the Equation of State on the Formation of Star Clusters," Li, Y., Klessen, R. S., & Mac Low, M.-M., 2003, Astrophys. J., 592, 975–985.

53. "The Influence of Supershells and Galactic Outflows on the Escape of Ionizing Radiation from Dwarf Starburst Galaxies," Fujita, A., Martin, C., Mac Low, M.-M., & Abel, T. 2003, Astrophys. J., 599, 50–69.

54. "The Control of Star Formation by Supersonic Turbulence," Mac Low, M.-M., & Klessen, R. S., 2004, Rev. Mod. Phys., 76, 125–194.

55. "Modification of Projected Velocity Power Spectra by Density Inhomogeneities in Compressible Supersonic Turbulence," Brunt, C. M., & Mac Low, M.-M. 2004, Astrophys. J., 604, 196–212.

56. "The Formation of Self-Gravitating Cores in Turbulent Magnetized Clouds," Li, P. S., Norman, M. L., Mac Low, M.-M., & Heitsch, F. 2004, Astrophys. J., 605, 800–818.

57. "Chondrule Formation and Protoplanetary Disk Heating by Current Sheets in Non-Ideal Magnetohydrodynamic Turbulence," Joung, M. K. R., Mac Low, M.-M., & Ebel, D. S. 2004, Astrophys. J., 606, 532–541.

58. "Ionization of Compressible Turbulence," Li, Y., Mac Low, M.-M., & Abel, T. 2004, Astrophys. J., 610, 339–350.

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61. "Formation of Globular Clusters in Galaxy Mergers," Li, Y., Mac Low, M.-M., & Klessen, R. S. 2004, Astrophys. J. (Letters), 614, L29–L32.

62. "Control of Star Formation in Galaxies by Gravitational Instability," Li, Y., Mac Low, M.-M., & Klessen, R. S. 2005, Astrophys. J. (Letters), 620, L19–L22.

63. "The Stellar Mass Spectrum from Non-Isothermal Gravoturbulent Fragmentation," Jappsen, A.-K., Klessen, R. S., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, Astron. Astrophys., 435, 611–623.

64. "Star Formation in Isolated Disk Galaxies. I. Models and Star Formation Characteristics," Li, Y., Mac Low, M.-M., & Klessen, R. S. 2005, Astrophys. J., 626, 823–843.

65. "The Distribution of Pressures in a Supernova-Driven Interstellar Medium. I. Magnetized Medium," Mac Low, M.-M., Balsara, D., Kim, J., & Avillez, M. A. 2005, Astrophys. J., 626, 864–876.

66. "The Inability of Ambipolar Diffusion to Set a Characteristic Mass Scale in Molecular Clouds," Oishi, J. S., & Mac Low, M.-M. 2006, Astrophys. J., 638, 281–285.

67. "Star Formation in Isolated Disk Galaxies. II. Schmidt Laws and Gravitational Collapse Efficiency," Li, Y., Mac Low, M.-M., & Klessen, R. S. 2006, Astrophys. J., 639, 879–896.

68. "Hydrodynamical simulations of the decay of high-speed molecular turbulence. II. Divergence from isothermality," Pavlovski, G., Smith, M. D. & Mac Low, M.-M. 2006, Monthly Not. Roy. Astron. Soc., 368, 943–958.

69. "Simulating Radiating and Magnetized Flows in Multi-Dimensions with ZEUS-MP," Hayes, J. C., Norman, M. L., Fiedler, R. A., Bordner, J. O., Li, P. S., Clark, S. E., ud-Doula, A., & Mac Low, M.-M. 2006, Astrophys. J. Suppl., 165, 188–228.

70. "Turbulent Structure of a Stratified Supernova-Driven Interstellar Medium," Joung, M. K. R., & Mac Low, M.-M. 2006, Astrophys. J., 653, 1266–1279.

71. "Star Formation at Very Low Metallicity. II: On the Insignificance of Metal-Line Cooling During the Early Stages of Gravitational Collapse," Jappsen, A.-K., Glover, S. C. O., Klessen, R. S., & Mac Low, M.-M. 2007, Astrophys. J., 660, 1332–1343.

72. "Simulating the formation of molecular clouds. I. Slow formation by gravitational collapse from static initial conditions," Glover, S. C. O., & Mac Low, M.-M. 2007, Astrophys. J. Suppl., 169, 239–268.

73. "Simulating the formation of molecular clouds. II. Rapid formation from turbulent initial conditions," Glover, S. C. O., & Mac Low, M.-M. 2007, Astrophys. J., 659, 1317–1337.

74. "Correlations Between Central Massive Objects and Their Host Galaxies: From Bulgeless Spirals to Ellipticals," Li, Y., Haiman, Z., & Mac Low, M.-M. 2007, Astrophys. J., 663, 61–70.

75. "Rapid Planetesimal Formation in Turbulent Circumstellar Discs," Johansen, A., Oishi, J. S., Mac Low, M.-M., Klahr, H., Henning, Th., & Youdin, A. 2007, Nature, 448, 1022–1025.

76. "Dynamical Expansion of H II Regions from Ultracompact to Compact Sizes in Turbulent, Self-Gravitating Molecular Clouds," Mac Low, M.-M., Toraskar, J., Oishi, J. S., & Abel, T. 2007, Astrophys. J., 668, 980–992.

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79. "A constrained-transport magnetohydrodynamics algorithm with near-spectral resolution," Maron, J. L., Mac Low, M.-M., & Oishi, J. S. 2008, Astrophys. J., 520–529.

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91. "Planetesimal and Protoplanet Dynamics in a Turbulent Protoplanetary Disk: Ideal Unstratified Disks," Yang, C.-C., Mac Low, M.-M., & Menou, K. 2009, Astrophys. J., 707, 1233–1246.

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97. "Understanding Spatial and Spectral Morphologies of Ultracompact H II Regions," Peters, T. P., Mac Low, M.-M., Banerjee, R., Klessen, R. S., & Dullemond, C. 2010, Astrophys. J., 719, 831–843 (erratum: 720, 1782).

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Ph. D. Dissertations Supervised

1. "Hydrodynamic Interactions Between Massive Isolated Stars and the Interstellar Medium," G. García-Segura, 1994, Departamento de Astrofisica, Universidad de La Laguna, Canary Islands, Spain.

2. "Cosmological Feedback from Dwarf Starburst Galaxies," A. Fujita, 2003, Department of Astronomy, Columbia University, New York, NY, USA.

3. "Star Formation Near and Far," Y. Li, 2005, Department of Astronomy, Columbia University, New York, NY, USA.

4. "Supernova-Driven Interstellar Turbulence," M. K. R. Joung, 2006, Department of Astronomy, Columbia University, New York, NY, USA

5. "Non-Ideal Magnetohydrodynamics in Star and Planet Formation," J. S. Oishi, 2007, Department of Astronomy, University of Virginia, Charlottesville, VA, USA

6. "Planetesimal and Protoplanet Dynamics in a Turbulent Protoplanetary Disk," C.-C. Yang, 2010, Department of Astronomy, University of Illinois at Urbana-Champaign, Champaign-Urbana, IL, USA

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2. "Entry and Fireball Models vs. Observations: What Have We Learned?," Mac Low, M.-M. 1996, in The Impacts of Comet D/Shoemaker-Levy 9 into Jupiter, IAU Colloquium 156, ed. K. Noll, (Cambridge: Cambridge University Press), 154. **(refereed)**

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10. "Clustered vs. Isolated Star Formation," Mac Low, M.-M. 2002, in Modes of Star Formation and the Origin of Field Populations, eds. E. K. Grebel & W. Brandner (San Francisco: ASP), 112.

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