August 7, 2014

Mordecai-Mark Mac Low

Department of Astrophysics
American Museum of Natural History
79th Street at Central Park West
New York, NY, 10024-5192, USA

Tel: +1 (212) 496-3443
Fax: +1 (212) 769-5007
E-Mail: mordecai@amnh.org

URL: `http://research.amnh.org/users/mordecai/`

Education : Stuyvesant High School, NYC: graduated 1979
Princeton University: A. B., Physics, 1983
(Senior Thesis advisor: Joseph Taylor)
University of Colorado at Boulder: M.A., Physics, 1985; Ph.D., Physics, 1989
(Dissertation advisor: Richard McCray)

Relevant Employment :

July 2007 –	Curator, Department of Astrophysics, American Museum of Natural History
July 2007 –	Adjunct Professor, Department of Astronomy, Columbia University
April 2012 –	Visiting Research Professor, Department of Physics, Drexel University
July 2007 – June 2012	Chair, Division of Physical Sciences, American Museum of Natural History
July 2005 – June 2012	Curator-in-Charge, Department of Astrophysics, American Museum of Natural History
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

Fellowships & Honors:

- University of Colorado Graduate School Fellowship, 1983-1984, 1985-1986
- National Research Council Fellowship, 1989-1990
- Humboldt Research Prize, 2014

Professional Associations :	International Astronomical Union, American Astronomical Society, American Physical Society
Fields of Interest :	Star Formation, Planet Formation, Structure of the Interstellar Medium and Molecular Clouds, 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.
12. "Bow Shock Models for the Velocity Structure of Ultracompact H II Regions," Van Buren, D., and Mac Low, M.-M. 1992, Astrophys. J., 394, 534.
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.
15. "A Protostellar Jet Model for the Water Masers in W49N," Mac Low, M.-M., Elitzur, M., Stone, J. M., and Königl, A. 1994, Astrophys. J., 427, 914–918.
16. "The Collision of Comet Shoemaker-Levy 9 and Jupiter," Zahnle, K., and Mac Low, M.-M. 1994, Icarus, 108, 1–17.

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.

19. "Explosion of Comet Shoemaker-Levy 9 on Entry into the Jovian Atmosphere," Mac Low, M.-M., and Zahnle, K. 1994, Astrophys. J. (Letters), 434, L33–L36.

20. "Ultraviolet Interstellar Absorption Lines in the Large Magellanic Cloud: Searching for Hidden Supernova Remnants," Chu, Y.-H., Wakker, B., Mac Low, M.-M., and García-Segura, G. 1994, Astron. J., 108, 1696.

21. "Incorporation of Ambipolar Diffusion into the ZEUS Magnetohydrodynamics Code," Mac Low, M.-M., Norman, M. L., Königl, A., and Wardle, M. 1995, Astrophys. J., 442, 726–735.

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.

25. "A Simple Model for the Light Curve Generated by a Shoemaker-Levy 9 Impact," Zahnle, K., and Mac Low, M.-M. 1995, J. Geophys. Res., Planets, 100, 16885–16894.

26. "Wolf-Rayet Bubbles. I. Analytic Solutions," García-Segura, G., and Mac Low, M.-M. 1995, Astrophys. J., 455, 145–159.

27. "Wolf-Rayet Bubbles. II. Gasdynamical Simulations," García-Segura, G., and Mac Low, M.-M. 1995, Astrophys. J., 455, 160.

28. "The Dynamical Evolution of Circumstellar Gas Around Massive Stars. I. The Impact of the Time Sequence O Star $\rightarrow$ LBV $\rightarrow$ WR Star," García-Segura, G., Mac Low, M.-M., and Langer, N. 1996, Astron. & Astrophys., 305, 229.

29. "The Hydrodynamical Evolution of Circumstellar Gas Around Massive Stars. II. The Impact of the Time Sequence O Star $\rightarrow$ RSG $\rightarrow$ WR Star," García-Segura, G., Langer, N., and Mac Low, M.-M. 1996, Astron. & Astrophys., 316, 133–146.

30. "The OMC-1 Molecular Hydrogen Outflow as a Fragmented Stellar Wind Bubble," McCaughrean, M. J., and Mac Low, M.-M. 1997, Astron. J., 113, 391–400.

31. "An Interstellar Conduction Front Surrounding a Wolf-Rayet Ring Nebula Observed with the *GHRS*," Boroson, B., McCray, R., Clark, C. O., Slavin, J., Mac Low, M.-M., Chu, Y.-H., and Van Buren, D. 1997, Astrophys. J., 478, 638 (Erratum 485, 436).

32. "The formation of C-shocks: structure and signatures," Smith, M. D., and Mac Low, M.-M. 1997, Astron & Astrophys., 326, 801–810.

33. "Nonlinear Development and Observational Consequences of Wardle C-Shock Instabilities," Mac Low, M.-M., and Smith, M. D. 1997, Astrophys. J., 491, 596.

34. "X-Rays from Superbubbles in the Large Magellanic Cloud. V. The H II Complex N11," Mac Low, M.-M., Chang, T. H., Chu, Y.-H., Points, S. D., Smith, R. C., and Wakker, B. P. 1998, Astrophys. J., 493, 260.

35. "Kinetic Energy Decay Rates of Supersonic and Super-Alfvénic Turbulence in Star-Forming Clouds," Mac Low, M.-M., Klessen, R. S., Burkert, A., and Smith, M. D. 1998, Phys. Rev. Lett., 80, 2754–2757.

36. "Starburst-driven Mass Loss from Dwarf Galaxies: Efficiency and Metal Ejection," Mac Low, M.-M., and Ferrara, A. 1999, Astrophys. J., 513, 142–155.

37. "Giant Outbursts of Luminous Blue Variables and the Formation of the Homunculus Nebula Around η Carinae," Langer, N., García-Segura, G., and Mac Low, M.-M. 1999, Astrophys. J. (Letters), 520, L49–L53.

38. "The Energy Dissipation Rate of Supersonic, Magnetohydrodynamic Turbulence in Molecular Clouds," Mac Low, M.-M. 1999, Astrophys. J., 524, 169–178.

39. "Characterizing the structure of interstellar turbulence," Mac Low, M.-M., and Ossenkopf, V. 1999, Astron. & Astrophys., 353, 339–348.

40. "Gravitational Collapse in Turbulent Molecular Clouds. I. Gasdynamical Turbulence," Klessen, R. S., Heitsch, F., & Mac Low, M.-M. 2000, Astrophys. J, 535, 887–906.

41. "The Shock Waves in Decaying Supersonic Turbulence," Smith, M. D., Mac Low, M.-M., & Zuev, J. M. 2000, Astron. Astrophys., 356, 287–300.

42. "High Resolution Calculations of Asteroid Impacts into the Venusian Atmosphere," Korycansky, D. G., Zahnle, K. J., & Mac Low, M.-M. 2000, Icarus, 146, 387–403 (erratum, 147, 592).

43. "The Distribution of Shock Waves in Driven Supersonic Turbulence," Smith, M. D., Mac Low, M.-M., & Heitsch, F. 2000, Astron. Astrophys., 362, 333–341.

44. "Gravitational Collapse in Turbulent Molecular Clouds. II. Magnetohydrodynamical Turbulence," Heitsch, F., Mac Low, M.-M., & Klessen, R. S. 2001, Astrophys. J, 547, 280–291.

45. "Mushroom-Shaped Structures as Tracers of Buoyant Flow in the Galactic Disk," Avillez, M. A. & Mac Low, M.-M. 2001, Astrophys. J. (Letters), 551, L57–L61.

46. "Magnetic Field Diagnostics Based on Far-Infrared Polarimetry: Tests Using Numerical Simulations," Heitsch, F., Zweibel, E. G., Mac Low, M.-M., Li, P., & Norman, M. L. 2001, Astrophys. J., 561, 800–814.

47. "High Resolution Calculations of Asteroid Impacts into the Venusian Atmosphere II: 3D Models," Korycansky, D. G., Zahnle, K. J., & Mac Low, M.-M. 2002, Icarus, 157, 1–23.

48. "Physical vs. Observational Properties of Clouds in Turbulent Molecular Cloud Models," Ballesteros-Paredes, J., & Mac Low, M.-M. 2002, Astrophys. J., 570, 734–748.

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

50. "Hydrodynamical simulations of the decay of high-speed molecular turbulence. I. Dense molecular regions," Pavlovski, G., Smith, M. D., Mac Low, M.-M., & Rosen, A. 2002, Monthly Not. Roy. Astron. Soc., 337, 477–487.

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.

59. "Cosmological Feedback from High-Redshift Dwarf Galaxies," Fujita, A., Mac Low, M.-M., Ferrara, A., & Meiksin, A. 2004, Astrophys. J., 613, 159–179 (erratum 615, 1082).

60. "Amplification of Interstellar Magnetic Fields by Supernova-Driven Turbulence," Balsara, D. S., Kim, J., Mac Low, M.-M., & Mathews, G. J. 2004, Astrophys. J., 617, 339–349.

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.

77. "Turbulent Torques on Protoplanets in a Dead Zone," Oishi, J. S., Mac Low, M.-M., & Menou, K. 2007, Astrophys. J., 670, 805–819.

78. "Large-scale Gravitational Instability and Star Formation in the Large Magellanic Cloud," Yang, C.-C., Gruendl, R., Chu, Y.-H., Mac Low, M.-M., & Fukui, Y. 2007, Astrophys. J., 671, 374–379.

79. "A constrained-transport magnetohydrodynamics algorithm with near-spectral resolution," Maron, J. L., Mac Low, M.-M., & Oishi, J. S. 2008, Astrophys. J., 677, 520–529.

80. "Geometrically Derived Timescales for Star Formation in Spiral Galaxies," Tamburro, D., Rix, H.-W., Walter, F., de Blok, W. J. G., Brinks, E., Kennicutt, R. C., & Mac Low, M.-M. 2008, Astron. J., 136, 2872–2885.

81. "Star Formation at Very Low Metallicity. IV. Fragmentation Does Not Depend on Metallicity for Cold Initial Conditions," Jappsen, A.-K., Klessen, R. S., Glover, S. C. O., & Mac Low, M.-M. 2009, Astrophys. J., 696, 1065–1074.

82. "Star Formation at Very Low Metallicity. V. The greater importance of initial conditions compared to metallicity thresholds," Jappsen, A.-K., Mac Low, M.-M., Glover, S. C. O., & Klessen, R. S. 2009, Astrophys. J., 694, 1161–1170.

83. "What is Driving the H I Velocity Dispersion?" Tamburro, D., Rix, H. W., Leroy, A. K., Mac Low, M.-M., Walter, F., Kennicutt, R. C., Brinks, E., & de Blok, W. J. G. 2009, Astron. J., 4424–4435.

84. "Tuned Finite-Difference Diffusion Operators," Maron, J., & Mac Low, M.-M. 2009, Astrophys. J. Suppl., 182, 468–473.

85. "The Origin and Kinematics of Cold Gas in Galactic Winds: Insight from Numerical Simulations," Fujita, A., Martin, C. L., Mac Low, M.-M., Weaver, R., & New, K. C. B. 2009, Astrophys. J., 698, 693–714.

86. "Type-Ia Supernova-driven Galactic Bulge Wind," Tang, S., Wang, Q. D., Mac Low, M.-M., & Joung, M. R. 2009, Monthly Not. Roy. Astron. Soc., 398, 1468–1482.

87. "Turbulent Driving Scales in Molecular Clouds," Brunt, C. M., Heyer, M. H., & Mac Low, M.-M. 2009, Astron. Astrophys., 504, 883–890.

88. "Dependence of Interstellar Turbulent Pressure on Supernova Rate," Joung, M. R., Mac Low, M.-M., & Bryan, G. L. 2009, Astrophys. J., 704, 137–149.

89. "On Hydrodynamic Motions in Dead Zones," Oishi, J. S., & Mac Low, M.-M. 2009, Astrophys. J., 704, 1239–1250.

90. "Particle Clumping and Planetesimal Formation Depend Strongly on Metallicity," Johansen, A., Youdin, A., & Mac Low, M.-M. 2009, Astrophys. J. (Letters), 704, L75–L79.

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.

92. "Algorithmic comparisons of decaying, isothermal, compressible turbulence. I. Low-resolution simulations with fixed grids," Kitsionas, S., Klessen, R. S., Federrath, C., Schmidt, W., Price, D., Dursi, J., Gritschneder, M., Walch, S., Piontek, R., Kim, J., Jappsen, A.-K., Ciecielag, P. & Mac Low, M.-M. 2009, Astron. Astrophys., 508, 541–560.

93. "H II regions: Witnesses to massive star formation," Peters, T., Klessen, R. S., Banerjee, R., Mac Low, M.-M., Galván-Madrid, R., & Keto, E. 2010, Astrophys. J., 711, 1017–1028.

94. "Modelling CO formation in the turbulent interstellar medium," Glover, S. C. O., Federrath, C., Mac Low, M.-M., & Klessen, R. S. 2010, Monthly Not. Roy. Astron. Soc., 404, 2–29.

95. "Comparing the statistics of interstellar turbulence in simulations and observations: Solenoidal versus compressive turbulence forcing," Federrath, C., Roman-Duval, J., Klessen, R. S., Schmidt, W., & Mac Low, M.-M. 2010, Astron. Astrophys., 512, A81 (28 pp.).

96. "Orbital migration of low-mass planets in evolutionary radiative models: Avoiding catastrophic infall," Lyra, W., Paardekooper, S.-J., & Mac Low, M.-M. 2010, Astrophys. J. (Letters), 715, L68–L73.

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).

98. "Photoionization of High Altitude Gas in a Supernova Driven Turbulent Interstellar Medium," Wood, K., Hill, A. S., Joung, M. R., Mac Low, M.-M., Benjamin, R. A., Haffner, L. M., Reynolds, R. J., & Madsen, G. J. 2010, Astrophys. J., 721, 1397–1403.

99. "The Origin of the Hot Gas in the Galactic Halo: Confronting Models with *XMM-Newton* Observations," Henley, D. B., Shelton, R. L., Kwak, K., Joung, M. R., & Mac Low, M.-M. 2010, Astrophys. J., 723, 935–953.

100. "Limiting Accretion onto Massive Stars by Fragmentation-Induced Starvation," Peters, T., Klessen, R. S., Mac Low, M.-M., & Banerjee, R. 2010, Astrophys. J., 725, 134–145.

101. "The Interplay of Magnetic Fields, Fragmentation and Ionization Feedback in High-Mass Star Formation," Peters, T., Banerjee, R., Klessen, R. S., & Mac Low, M.-M. 2011, Astrophys. J., 729, 72 (12 pp.)

102. "On the α-Formalism for the Common Envelope Interaction," De Marco, O., Passy, J.-C., Moe, M., Herwig, F., Mac Low, M.-M., & Paxton, B. 2011, Monthly Not. Roy. Astron. Soc., 411, 2277–2292.

103. "On the Relationship Between Molecular Hydrogen and Carbon Monoxide Abundances in Molecular Clouds," Glover, S. C. O., & Mac Low, M.-M. 2011, Monthly Not. Roy. Astron. Soc., 412, 337–350.

104. "An Introduction to the *Chandra* Carina Complex Project," Townsley, L. K. et al. (Mac Low is author 21/33.) 2011, Astrophys. J. Supp., 194, 1 (28 pp).

105. "The *Chandra* Carina Complex Project: Deciphering the Enigma of Carinas Diffuse X-Ray Emission," Townsley, L. K., Broos, P. S., Chu, Y.-H., Gagné, M., Garmire, G. P., Gruendl, R. A., Hamaguchi, K., Mac Low, M.-M., Montmerle, T. Nazé, Y., Oey, M. S., Parka, S., Petre, R., & Pittard, J. M. 2011, Astrophys. J. Supp., 194, 15 (23 pp).

106. "Time variability in simulated ultracompact and hypercompact HII regions," 2011, Galván-Madrid, R., Peters, T., Keto, E. R., Mac Low, M.-M., Banerjee, R., & Klessen, R. S. Monthly Not. Roy. Astron. Soc., 416, 1033–1044.

107. "Magnetorotational Turbulence Transports Angular Momentum in Stratified Disks with Low Magnetic Prandtl Number but Magnetic Reynolds Number above a Critical Value," 2011, Oishi, J. S., & Mac Low, M.-M. Astrophys. J., 740, 18 (11 pp.).

108. "Simulating the Common Envelope Phase of a Red Giant Using SPH and Uniform Grid Codes," 2012, Passy, J.-C., De Marco, O. Fryer, C., Herwig, F., Diehl, S., Oishi, J., Mac Low, M.-M., Bryan, G., & Rockefeller, G. Astrophys. J., 744, 52 (17 pp).

109. "The Abundance of Molecular Hydrogen and its Correlation with Midplane Pressure in Galaxies: Non-Equilibrium, Turbulent, Chemical Models," 2012, Mac Low, M.-M. & Glover, S. C. O. Astrophys. J., 746, 135 (8 pp).

110. "Planetesimal and Protoplanet Dynamics in a Turbulent Protoplanetary Disk: Ideal Stratified Disks," 2012, Yang, C.-C., Mac Low, M.-M., & Menou, K. Astrophys. J., 748, 79 (16 pp).

111. "Orbital migration of interacting low-mass planets in evolutionary radiative turbulent models," Horn, R. B., Lyra, W., Sándor, Z., & Mac Low, M.-M., 2012, Astrophys. J., 750, 34 (14 pp) .

112. "Vertical structure of a supernova-driven turbulent, magnetized interstellar medium," 2012, Hill, A. S., Joung, M. R., Mac Low, M.-M., Benjamin, R. A., Haffner, L. M., Klingenberg, C., & Waagan, K. Astrophys. J., 750, 104 (19 pp). (Erratum: 761, 189)

113. "Phurbas: An Adaptive, Lagrangian, Meshless, Magnetohydrodynamics Code. I. Algorithm," Maron, J., McNally, C. P., & Mac Low, M.-M. 2012, Astrophys. J. Suppl., 200, 6 (14 pp).

114. "Phurbas: An Adaptive, Lagrangian, Meshless, Magnetohydrodynamics Code. II. Implementation and Tests," McNally, C. P., Maron, J., & Mac Low, M.-M. 2012, Astrophys. J. Suppl., 200, 7 (13 pp).

115. "Rossby wave instability at dead zone boundaries in 3D resistive magnetohydrodynamical global models of protoplanetary disks," Lyra, W., & Mac Low, M.-M. 2012, Astrophys. J., 756, 62 (10 pp).

116. "On the survival of brown dwarfs and planets engulfed by their giant host star," Passy, J.-C., Mac Low, M.-M., & De Marco, O. 2012, Astrophys. J. (Letters), 759, L30 (5 pp).

117. "Are Molecular Outflows Around High-Mass Stars Driven By Ionization Feedback?" Peters, T., Klaassen, P. D., Mac Low, M.-M., Klessen, R. S., & Banerjee, R. 2012, Astron. Astrophys., 760, 91 (8 pp).

118. "Short circuits in thermally ionized plasmas: protoplanetary disks and chondrules," Hubbard, A., McNally, C. P., & Mac Low, M.-M. 2012, Astrophys. J., 761, 58 (10 pp).

119. "Mineral Processing by Short Circuits in Protoplanetary Disks," McNally, C. P., Hubbard, A., Mac Low, M.-M., Ebel, D., & D'Alessio, P. 2013, Astrophys. J. (Letters), 767, L2 (6 pp).

120. "Dynamical Fragmentation of the T Pyxidis Nova Shell During Recurrent Eruptions," Toraskar, J., Mac Low, M.-M., Shara, M. M., & Zurek, D. R. 2013, Astrophys. J., 768, 48 (11 pp).

121. "The effect of feedback and reionization on star formation in low-mass dwarf galaxy haloes," Simpson, C. M., Bryan, G. L., Johnston, K. V., Smith, B. D., Mac Low, M.-M., Sharma, S., & Tumlinson, J. 2013, Monthly Not. Roy. Astron. Soc., 432, 1989–2011.

122. "From Gas to Stars Over Cosmic Time," Mac Low, M.-M. 2013, Science, 340, 1229229 (8 pp).

123. "Flickering of 1.3 cm Sources in Sgr B2: Towards a Solution to the Ultracompact H II Region Lifetime Problem," De Pree, C. G., Peters, T., Mac Low, M.-M., Wilner, D. J., Goss W. M., Galván-Madrid, R., Keto, E. R., Heath, J., Monsrud, A., & Klessen, R. S. 2014, Astrophys. J. (Letters), 781, L36 (4 pp).

124. "Collective outflow from a small multiple stellar system," Peters, T., Klaassen, P., Mac Low, M.-M., Schrön, M., Federrath, C., Smith, M. D., & Klessen, R. S. 2014, Astrophys. J., 788, 14 (17 pp).

125. "Temperature Fluctuations driven by Magnetorotational Instability in Protoplanetary Disks," McNally, C., Hubbard, A., Yang, C.-C., & Mac Low, M.-M. 2014, Astrophys. J., 791, 62 (15 pp.).

126. "Turbulent wakes destroy gaps around high-mass planets or brown dwarfs in radiatively inefficient disks," Richert, A., Lyra, W., Mac Low, M.-M., & Turner, N. 2014, Astrophys. J., submitted.

127. "A three dimensional magnetohydrodynamic instability that drives fast magnetic reconnection," Oishi, J. S., Mac Low, M.-M., Collins, D., & Tamura, M. 2014, Phys. Rev. Lett., submitted.

128. "The Driving of Decretion by Maxwell Stress in Disks," Hubbard, A., McNally, C. P., Oishi, J. S., Lyra, W., & Mac Low, M.-M. 2014, Astrophys. J., submitted (arXiv:1405.3991).

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

7. "A Meshless Method for Magnetohydrodynamics and Applications to Protoplanetary Disks," C. P. McNally, 2012, Department of Astronomy, Columbia University, New York, NY, USA

Invited Reviews

1. "Bullets or Fragmenting Shells," Mac Low, M.-M. 1995, Nature (News & Views), 377, 287.

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**)

3. "Superbubble Blowout," Mac Low, M.-M. 1996, in The Interplay Between Massive Star Formation, the ISM and Galaxy Evolution, ed. D. Kunth, et al. (Paris: Editions Frontières), 169.

4. "Structure and Dynamics of Magnetized Interstellar Clouds: Super-Alfvénic Turbulence?," Mac Low, M.-M. 1997, in The Orion Complex Revisited, ed. M. J. McCaughrean & A. Burkert (San Francisco: Astron. Soc. Pacific), in press.

5. "Wolf-Rayet and LBV Nebulae as the Result of Variable and Non-Spherical Stellar Winds," Mac Low, M.-M. 1998, in IAU Colloquium 169 on Variable and Non-Spherical Stellar Winds in Luminous Hot Stars, ed. B. Wolf (Heidelberg: Springer-Verlag), 391.

6. "The Interaction of the Disk with the Halo" Mac Low, M.-M. 1998, in New Perspectives on the Interstellar Medium, eds. A. R. Taylor, T. L. Landecker, and G. Joncas (San Francisco: ASP), 303.

7. "MHD Turbulence in Star-Forming Clouds," Mac Low, M.-M., Klessen, R. S., and Heitsch, F. 1999, in Optical and Infrared Spectroscopy of Circumstellar Matter, eds. S. Klose, E. Günther, & B. Stecklum, (San Francisco: ASP), 177.

8. "Is the Plasma within Bubbles and Superbubbles Hot or Cold," Mac Low, M.-M. 1999, in Astrophysical Plasmas: Codes, Models & Observations. Mexico City 25-29 October, 1999. Editors: S.J. Arthur, N. Brickhouse and J. Franco. To be published in the Revista Mexicana de Astronomia y Astrofisica, Serie de Conferencias, E40.

9. "The Dynamical Interstellar Medium: Insights from Numerical Models," Mac Low, M.-M. 2000, in Stars, Gas, and Dust in Galaxies, eds. D. Alloin, K. Olsen, & G. Galaz (San Francisco: ASP), 55.

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.

11. "What Controls the Star-Formation Rate in Galaxies?," Mac Low, M.-M. 2002, Astrophys. Sp. Sci., 281, 429.

12. "MHD Turbulence in Star-Forming Regions," Mac Low, M.-M. 2003, in Turbulence and Magnetic Fields in Astrophysics, eds. E. Falgarone & T. Passot, (Heidelberg: Springer Lecture Notes in Physics), 182–212. (**refereed**)

13. "Wolf-Rayet Central Stars and the Binary Evolution Channel," De Marco, O., Sandquist, E. L., Mac Low, M.-M., Herwig, F., & Taam, R. E. 2003, Rev. Mex. Astron. Astrofis. (Conf. Ser.), 18, 24–30.

14. "Turbulence in the Interstellar Medium: Energetics and Driving Mechanisms," Mac Low, M.-M., 2004, Astrophys. Space Sci., 289, 323–331.

15. "The Turbulent Interstellar Medium: Insights and Questions from Numerical Models," Mac Low, M.-M., Avillez, M. A., & Korpi, M. J. 2004, in How Does the Galaxy Work?, eds. E. J. Alfaro, E. Pérez, J. Franco (Dordrecht: Kluwer) 339–346.

16. "Turbulent Structure of the Interstellar Medium," Mac Low, M.-M. 2004, in The Dense Interstellar Medium in Galaxies, eds. S. Pfalzner, C. Kramer, C. Straubmeier, & A. Heithausen (Berlin: Springer Verlag), 379–386.

17. "Gravoturbulent Star Cluster Formation," Klessen, R. S., Ballesteros-Paredes, J., Li, Y., & Mac Low, M.-M. 2004, in The Formation and Evolution of Massive Young Star Clusters, eds. H. J. G. L. M. Lamers, L. J. Smith, & A. Nota (San Francisco: Astron. Soc. Pacific) 299–307.

18. "Magnetized Turbulence," Mac Low, M.-M. 2005, in The Magnetized Plasma in Galaxy Evolution, eds. K. T. Chyży, K. Otmianowska-Mazur, M. Soida, & R. J. Dettmar (Kraków: Jagiellonian U. Press), 41–47

19. "Stellar Mass Spectra from Non-Isothermal Gravoturbulent Fragmentation," Klessen, R. S., Jappsen, A.-K., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, in IMF50: The Stellar Initial Mass Function Fifty Years Later, eds. E. Corbelli, F. Palla, & H. Zinnecker (Dordrecht: Kluwer), 363–370.

20. "Molecular Cloud Turbulence and Star Formation," Ballesteros-Paredes, J., Klessen, R. S., Mac Low, M.-M., & Vázquez-Semadeni, E. 2007, in Protostars & Planets V, eds. B. Reipurth, D. Jewitt, & K. Keil (Tucson, AZ: U of Arizona Press), 63–80. (**refereed**)

21. "Galactic-scale star formation by gravitational instability," Mac Low, M.-M., Li, Y., & Klessen, R. S. 2007, in Triggered Star Formation in a Turbulent Interstellar Medium, eds. B. G. Elmegreen, & J. Palouš (Cambridge, UK: Cambridge U. Press), 336–343

22. "Feedback Processes: A Theoretical Perspective," Mac Low, M.-M. 2008, in Massive Star Formation: Observations Confront Theory, eds. H. Beuther, H. Linz, & Th. Henning. (San Francisco: ASP), 148–157.

23. "Magnetic Effects in Global Star Formation," Mac Low, M.-M. 2008, in Rev. Mex. Astron. Astrof. Ser. Conf., 36, 121–127.

24. "Open issues in small- and large-scale structure formation," Klessen, R. S., & Mac Low, M.-M. 2009, in Structure Formation in Astrophysics, ed. G. Chabrier (Cambridge: Cambridge U. Press), 427–440.

25. "Diffuse Interstellar Medium and the Formation of Molecular Clouds," Hennebelle, P., Mac Low, M.-M., & Vázquez-Semadeni, E. 2009, in Structure Formation in Astrophysics, ed. G. Chabrier (Cambridge: Cambridge U. Press), 205–227.

26. "Magnetic Helicity and Astrophysical Disk Dynamos," Oishi, J. S., & Mac Low, M.-M. 2011 in Partially Ionized Plasmas Throughout the Cosmos, eds. V. Florinski, J. Heerikhuisen, G. P. Zank, & D. L. Gallagher. (Heidelberg: Springer) 122–128.

27. "Control of galactic scale star formation by gravitational instability or midplane pressure?" Mac Low, M.-M. 2011, in Computational Star Formation, eds. J. Alves, B. G. Elmegreen, & V. Trimble (Cambridge: Cambridge U. Press), 371–375.

28. "Modeling High-Mass Star Formation and Ultracompact H II Regions," Klessen, R. S., Peters, T., Banerjee, R., Mac Low, M.-M., Galván-Madrid, R., & Keto, E. R. 2011, in Computational Star Formation, eds. J. Alves, B. G. Elmegreen, & V. Trimble (Cambridge: Cambridge U. Press), 107–114

29. "From Gas to Stars Over Cosmic Time," Mac Low, M.-M. 2013, in Molecular Gas, Dust, and Star Formation in Galaxies, eds. J. Ott, & T. Wong (Cambridge: Cambridge U. Press), 3–15.

Conference Proceedings

1. "Numerical Models of Superbubble Dynamics," Mac Low, M.-M., Norman, M. L., and McCray, R. 1988, in Supernova Remnants in the Interstellar Medium, eds. R. S. Roger and T. L. Landecker (Cambridge: Cambridge University Press), 461.

2. "Evolution of Magnetized Supershells," Ferrière, K. M., Zweibel, E. G., Shull, J. M., and Mac Low, M.-M. 1990, in Evolution of the Interstellar Medium, ed. Leo Blitz, ASP Conference Series, Vol. 12 (San Francisco: Astronomical Society of the Pacific), 345.

3. "Massive Stellar Wind-Molecular Cloud Interactions," Wood, D. O. S., Churchwell, E., Mac Low, M.-M., & Van Buren, D. 1991, in Atoms, ions and molecules: New results in spectral line astrophysics, ASP Conference Series vol. 16 (ASP: San Francisco), 153.

4. "MHD Shock Interactions with Interstellar Clouds," Mac Low, M.-M., Klein, R. I., McKee, C. F., Stone, J. A., and Norman, M. L. 1992, in Evolution of Interstellar Matter and Dynamics of Galaxies, ed. J. Palouš, W. B. Burton, & P. O. Lindblad (Cambridge: Cambridge University Press), 93.

5. "Origin of Water Masers in W49N," Mac Low, M.-M., and Elitzur, M. 1992, in Astrophysical Masers, ed. G. Nedoluha and A. Clegg (New York: Springer), 172.

6. "Wind-Blown Bubbles in Ejecta Medium," García-Segura, G., and Mac Low, M.-M. 1992, in Massive Stars: Their Lives in the Interstellar Medium, eds. J. P. Cassinelli and E. B. Churchwell (San Francisco: Astronomical Society of the Pacific), 534.

7. "Wind-Blown Bubbles in Ejecta Medium," García-Segura, G., and Mac Low, M.-M. 1992, in Star Formation, Galaxies and the Interstellar Medium, ed. J. Franco, F. Ferrini, and G. Tenorio-Tagle (Cambridge: Cambridge University Press), 283.

8. "Nonlinear Growth of Dynamical Overstabilities in Blast Waves," Mac Low, M.-M. and Norman, M. L. 1992, in Star Formation, Galaxies and the Interstellar Medium, ed. J. Franco, F. Ferrini, and G. Tenorio-Tagle (Cambridge: Cambridge University Press), 254.

9. "Three-Wind Model for Wolf-Rayet Bubbles," García-Segura, G., and Mac Low, M.-M. 1994, in Circumstellar Media in the Late Stages of Stellar Evolution, ed. R. E. Clegg & I. R. Stevens (Cambridge: Cambridge University Press), 85–88.

10. "The Imprint of Massive Stellar Evolution on Circumstellar Gas," García-Segura, G., Mac Low, M.-M., and Langer, N. 1994, in proceedings of the 163rd IAU Symposium, ed. K. A. van der Hucht & P. M. Williams (Kluwer: Dordrecht), 72.

11. "Unsolved Problems and the Future of ISM Research: Interaction Between Massive Stars and the ISM," Chu, Y.-H. and Mac Low, M.-M. 1995, Rev. Mex. Astron. Astrof. Ser. Conf. 3, 283.

12. "The Imprint of Massive Stellar Evolution on Circumstellar Gas," García-Segura, G., Mac Low, M.-M., and Langer, N. 1995, Astrophys. & Sp. Sci., 163, 72.

13. "X-Ray Emission from Superbubbles," Chu, Y.-H. and Mac Low, M.-M. 1996, in Röntgenstrahlung From the Universe, MPE Report 263 (Garching: MPI für Extraterrestriche Physik), 241.

14. "LBV Outbursts: The Effects of Rotation," García-Segura, G., Langer, N., and Mac Low, M.-M., 1997, in Luminous Blue Variables: Massive Stars in Transition, eds. A. Nota & H. J. G. L. M. Lamers (San Francisco: Astron. Soc. Pacific), 332.

15. "Time Dependent, Multidimensional Models of C-Shocks," Mac Low, M.-M. & Smith, M. D. 1997, in Low Mass Star Formation from Infall to Outflow, Poster Proceedings of IAU Symposium 182, eds. F. Malbet & A. Castets (Grenoble: Obs. Grenoble), 155.

16. "Superbubbles in Dwarf Galaxies: Blown Out or Blown Away?," Mac Low, M.-M. & Ferrara, A. 1997, in The Local Bubble and Beyond, IAU Colloq. 166, eds. D. Breitschwerdt & M. Freyberg (Heidelberg: Springer-Verlag), 559. (*refereed*)

17. "Supersonic Ambipolar Diffusion: Estimating the Magnetic Field Strength in Protostellar Outflows," Smith, M. D. & Mac Low, M.-M., Astrophys. & Sp. Sci., 261, 191.

18. "The Decay of Supersonic and Super-Alfvénic Turbulence in Star-Forming Clouds: The Spatial Distribution of Shocks," Mac Low, M.-M., Smith, M. D., Klessen, R. S., & Burkert, A. Astrophys. & Sp. Sci., 261, 183.

19. "Starbursts in dwarf galaxies: Blown out or blown away?," Mac Low, M-M. & Ferrara, A. 1998, in The Magellanic Clouds and Other Dwarf Galaxies, eds. T. Richtler & J. M. Braun, (Aachen: Shaker Verlag), 177.

20. "ROSAT observations of the giant H II complex N 11 in the LMC," Mac Low, M.-M., Chang, T. H., Chu, Y.-H., Points, S. D., Smith, R. C., & Wakker, B. P. 1998, in The Magellanic Clouds and Other Dwarf Galaxies, eds. T. Richtler & J. M. Braun, (Aachen: Shaker Verlag), 269.

21. "Effects of Magnetized Turbulence on the Structure and Dynamical Evolution of Molecular Clouds," Heitsch, F., Mac Low, M.-M., Klessen, R. 1999, in Plasma Turbulence and Energetic Particles in Astrophysics, eds. M. Ostrowski, R. Schlickeiser (Krakow: Obs. Astron. of U. Jagiellonski), 103–106.

22. "Decay Timescales of MHD Turbulence in Molecular Clouds," Mac Low, M.-M., Klessen, R. S., Burkert, A., & Smith, M. D., 2000, in Interstellar Turbulence, eds. J. Franco & A. Carraminana (Cambridge: Cambridge U. Press), 256.

23. "Turbulence Driven by Stellar Outflows," Mac Low, M.-M. 2000, in Star Formation from the Small to the Large Scale ESA Spec. Pub. 445, ed. F. Favata, A. Kaas, & A. Wilson (Noordwijk: ESA ESTEC), 457.

24. "3-D Visualizations of Massive Astronomy Datasets with a Digital Dome," Liu, C. T., Abbott, B., Emmart, C., Mac Low, M.-M., Shara, M., Summers, F. J., & Tyson, N. D. 2001, ASP Conf. Ser. 225: Virtual Observatories of the Future, (San Francisco: ASP), 188.

25. "Turbulence Driven by Supernova Explosions in a Radiative-Cooling Magnetized Interstellar Medium," Kim, J., Balsara, D., Mac Low, M.-M. 2001, J. Korean Astr. Soc., 34, 333–335.

26. "The Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State," Li, Y., Klessen, R. S., & Mac Low, M.-M. 2002, in Extragalactic Globular Cluster Systems, ed. M. Kissler-Patig (Springer, Heidelberg), 32.

27. "Modelling the Formation of Molecular Clouds with ZEUS-MP," Glover, S. C. O., Mac Low, M.-M., Smith, M. D., Rosen, A., & Pavlovski, G., 2002, in Chemistry as a Diagnostic of Star Formation, eds. C. L. Curry & M. Fich (NRC Press, Ottawa), 35.

28. "Of Wolf-Rayet Central Stars and Common Envelopes," De Marco, O., Sandquist, E. L., Mac Low, M.-M., Herwig, F., Taam, R. E. 2003, Rev. Mex. Astron. Astrofis. (Ser. Conf.), 15, 34–37

29. "Mixing in a supernova driven ISM - A 3D parameter Study," Avillez, M. A., & Mac Low, M.-M. 2003, Rev. Mex. Astron. Astrofis. (Ser. Conf.), 15, 290–292.

30. "Molecule Destruction and Formation in Molecular Clouds," Smith, M. D., Pavlovski, G., Mac Low, M.-M., Rosen, A., Khanzadyan, T., Gredel, R., Stanke, T. 2004, Astrophys. & Space Sci., 298, 333–336.

31. "Hydrodynamical Simulations of Molecular Dynamics in Supersonic Turbulent Flow," Pavlovski, G., Smith, M. D., Mac Low, M.-M., & Rosen, A. 2004, Astrophys. Sp. Sci., 292, 69–75.

32. "Formation of Stellar Clusters in Turbulent Molecular Clouds: Effects of the Equation of State," Li, Y., Klessen, R. S., & Mac Low, M.-M. 2004, Baltic Astron., 13, 377–380.

33. "Chondrule Formation by Current Sheets in Protoplanetary Disks," Ebel, D. S., Joung, M. K. R., & Mac Low, M.-M. 2004, Lunar Plan. Sci. Conf., 35, 1971. (2 pp.)

34. "Non-Isothermal Gravoturbulent Fragmentation," Jappsen, A.-K., Klessen, R. S., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, in Cores to Clusters: Star Formation with Next Generation Telescopes. Eds. M. S. Nanda Kumar, M. Tafalla, & P. Caselli (New York: Springer), 77–86.

35. "Non-isothermal gravoturbulent fragmentation: effects on the IMF," Jappsen, A.-K., Klessen, R. S., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, Mem. Soc. Astron. Ital., 76, 199–204.

36. "Turbulent Structure and Star Formation in a Stratified, Supernova-Driven, Interstellar Medium," Joung, M. K. R., & Mac Low, M.-M. 2007, in Triggered Star Formation in a Turbulent Interstellar Medium, eds. B. G. Elmegreen, & J. Palouš (Cambridge, UK: Cambridge U. Press), 358–362.

37. "Paleontological and Mineralogical Evidence for a Single K/T Extinction Impact at Chicxulub," Ebel, D. S., Mac Low, M.-M., & Landman, N. H. 2008, Lunar Plan. Sci. Conf., 39, 1454 (2 pp).

38. "The Influence of Metallicity on Star Formation in Protogalaxies", Jappsen, A.-K., Glover, S. C. O., Klessen, R. S., & Mac Low, M.-M. 2008, in First Stars III, eds. T. Abel, A. Heger, & B. O'Shea (Melville, NY: American Institute of Physics), 76–78.

39. "Star Formation is Very Rapid in Spiral Galaxies," Tamburro, D., Rix, H.-W., Walter, F., Brinks, E., de Blok, W. J. G., Kennicutt, R. C., Mac Low, M.-M. 2008, in Formation and Evolution of Galaxy Disks, eds. J. G. Funes, S. J., & E. M. Corsini (San Francisco: Astron. Soc. Pac.) 163–164.

40. "The importance of initial conditions and metallicity for the fragmentation of protogalactic gas." Jappsen, A.-K., Glover, S. C. O., Mac Low, M.-M., & Klessen, R. S. 2010, in Chemical Abundances in the Universe: Connecting First Stars to Planets, eds. K. Cunha, M. Spite, & B. Barbuy (Cambridge: Cambridge U. Press) 65–66.

41. "Radiative Feedback in Massive Star and Cluster Formation," Peters, T., Klessen, R. S., Mac Low, M.-M., & Banerjee, R. 2011, in Stellar Clusters & Associations: A RIA Workshop on GAIA (Granada: Inst. Astrof. Andalucía), 229–234.

42. "Understanding the physics of the X-factor," Glover, S. C. O., & Mac Low, M.-M. 2011, in Conditions and impact of star formation: New results with Herschel and beyond, eds. M. Röllig, R. Simon, V. Ossenkopf, & J. Stutzki (Cambridge: EDP Sciences), 147–150.

43. "MHD simulations of a supernova-driven ISM and the warm ionized medium using a positivity preserving ideal MHD scheme," Mac Low, M.-M., Hill, A. S., Joung, M. R., Waagan, K., Klingenberg C., Wood, K., Benjamin, R. A., Federrath, C., & Haffner, L. M. 2012, in Numerical Modeling of Space Plasma Flows (Astronum 2011), eds. N. V. Pogorelov, J. A. Font, E. Audit, & G. P. Zank (San Francisco: ASP), 112–117.

44. "How Common Envelope Interactions Change the Lives of Stars and Planets." De Marco, O., Passy, J.-C., Herwig, F., Fryer, C. L., Mac Low, M.-M., Oishi, J. S. 2012, in From Interacting Binaries to Exoplanets: Essential Modeling Tools, eds. M. T. Richards & I. Hubeny (Cambridge U. Press, Cambridge), 517–520.

45. "Mineral Processing by Short Circuits in Protoplanetary Disks," McNally, C. P., Hubbard, A., Mac Low, M.-M., Ebel, D. S., & D'Alessio, P. 2013, LPSC Abstracts, 44, 2844 (2 pp.)

Abstracts

1. "Intergalactic Molecule Formation at High Redshift," Mac Low, M.-M. and Shull, J. M. 1985, Bull. Amer. Astron. Soc., 16, 962.

2. "Superbubbles in Spiral Galaxies," Mac Low, M.-M. and McCray, R. 1986, Bull. Amer. Phys. Soc., 31, 851.

3. "Supershells and Propagating Star Formation," Mac Low, M.-M., McCray, R., and Kafatos, M. 1986, in Abstracts of Symposium on Interstellar Processes, eds. D. J. Hollenbach and H. A. Thronson, Jr. (Moffett Field, CA: NASA Ames Research Center).

4. "Supershells and Propagating Star Formation," Mac Low, M.-M., McCray, R., and Kafatos, M. 1986, Publ. Astron. Soc. Pac., 98, 1104.

5. "Numerical Models of Superbubble Dynamics," Mac Low, M.-M., Norman, M. L., and McCray, R. 1987, Bull. Amer. Astron. Soc., 19, 723.

6. "Ultracompact H II Regions as Stellar Wind Bow Shocks: Detailed Models," Mac Low, M.-M., Van Buren, D., Wood, D. O. S., and Churchwell E. 1989, Bull. Amer. Astron. Soc., 21, 762.

7. "Analytic Theory of Cometary H II Regions as Bow Shocks," Van Buren D., Mac Low, M.-M., Wood, D. O. S., and Churchwell, E. 1989, Bull. Amer. Astron. Soc., 21, 762.

8. "Diffuse X-Ray Emission Around OB Associations in the Large Magellanic Cloud," Mac Low, M.-M. and Chu, Y.-H. 1990, Bull. Amer. Astron. Soc., 21, 1155.

9. "Evolution of Magnetized Supershells," Ferrière, K. M., Zweibel, E. G., and Mac Low, M.-M. 1990, Bull. Amer. Astron. Soc., 22, No. 1.

10. "X-Ray Emission From Colliding Stellar Winds," Luo, D., McCray, R., and Mac Low, M.-M. 1990, Bull. Amer. Astron. Soc., 22, No. 1.

11. "Evolution of a Superbubble Blastwave in a Magnetized Medium," Ferrière, K. M., Zweibel, E. G., and Mac Low, M.-M. 1990, in The Interstellar Medium in External Galaxies: Summaries of Contributed Papers , eds. D. J. Hollenbach and J. M. Shull (Moffett Field, CA: NASA Ames Research Center), 227.

12. "Interactions of Magnetized Clouds with Interstellar Shock Waves," Mac Low, M.-M., Klein, R. I., McKee, C. F., Stone, J. A., and Norman, M. L. 1991, Bull. Amer. Astron Soc., 23, No. 4.

13. "Magnetized Interstellar Blast Waves," Mac Low, M.-M., and Norman, M. L. 1992, Bull. Amer. Astron. Soc., 24, 1227.

14. "Hidden Supernova Remnants in the LMC HII Complex N44," Chu, Y.-H., Mac Low, M.-M., and García-Segura, G. 1992, Bull. Amer. Astron. Soc., 24, 1302.

15. "Three-Wind Model for Wolf-Rayet Bubbles," García-Segura, G., and Mac Low, M.-M. 1993, Bull. Amer. Astron. Soc., 25, 787.

16. "Some Consequences of the Collision of a Comet and Jupiter," Zahnle, K., Mac Low, M.-M., and Chyba, C. F. 1993, Bull. Amer. Astron. Soc., 25, 1043.

17. "Ambipolar Diffusion in Protostellar Accretion Disks: A Numerical Model," Mac Low, M.-M., Norman, M. L., Königl, A., and Wardle, M. 1994, Bull. Amer. Astron. Soc., 25, 1352.

18. "The Impact of Comet Shoemaker-Levy 9 on Jupiter," Mac Low, M.-M., and Zahnle, K. 1994, Bull. Amer. Astron. Soc., 26, 926.

19. "The NASA/IRTF SL9 Observing Campaign," Orton, G. et al. 1994, Bull. Amer. Astron. Soc., 26, 1581.

20. "New Results About the Hot Corona of the LMC," Bomans, D. J., Chu, Y.-H., de Boer, K. S., Wakker, B., & Mac Low, M.-M., Astron. Gesell. Abstract Ser., 10, 202.

21. "Comparison Between Observations and Numerical Models of the Impact of Comet Shoemaker-Levy 9 on Jupiter," Mac Low, M.-M., and Zahnle, K. 1994, Bull. Amer. Astron. Soc., 26, 1583.

22. "More Consequences of the Collision of a Comet and Jupiter," Zahnle, K. and Mac Low, M.-M. 1994, Bull. Amer. Astron. Soc., 26, 1579.

23. "The End of Comet Shoemaker-Levy 9," Zahnle, K. and Mac Low, M.-M. 1994, Eos, 75, 402.

24. "Rotating Massive Stars Near the Eddington Limit: η Carinae," García-Segura, G., Langer, N, Fliegner, J., and Mac Low, M.-M. 1995, Rev. Mex. Astron. Astrof. Ser. Conf. 3, 294.

25. "Re-entry Shock Temperatures of the R Fragment of Comet Shoemaker-Levy 9," Kim, S. J., Ruiz, M., Rieke, G. H., Rieke, M. J., Zahnle, K., and Mac Low, M.-M. 1995, Bull. Amer. Astron. Soc., 27, 1339.

26. "The Fragmenting Stellar Wind Bubble at the Heart of OMC-1 Revealed," Mac Low, M.-M. and McCaughrean, M. J. 1995, Bull. Amer. Astron. Soc., 27, 1322.

27. "Nonlinear Propagating Features in the Stratosphere of Jupiter Generated by the Impact of SL-9," Young, R. E., Zahnle, K., and Mac Low, M.-M. 1995, Bull. Amer. Astron. Soc., 27, 1128.

28. "Formation of the Homunculus Nebula around η Carinae," Mac Low, M.-M., Langer, N., and García-Segura, G. 1996, Bull. Amer. Astron. Soc., 28, 882.

29. "Time Dependent Models of Continuous Shocks in Star Forming Regions," Mac Low, M.-M., and Smith, M. D. 1996, Astron. Gesell. Abstract Ser., 12, 174.

30. "Simulations of MHD Turbulence in Molecular Clouds: Decay Timescales and Spatial Structure," Mac Low, M.-M., Klessen, R., Burkert, A., Smith, M. D., and Kessel, O. 1997, Bull. Amer. Astron. Soc., 29, 1244.

31. "DuSable High School Internet Project and its influence in connecting Chicago Public Schools to the Internet," York, D. G., Mac Low, M.-M., Brown, B., Franco, L. M., Rebull, L. M., Graziani, C., Lauroesch, J. 1998, Bull. Amer. Astron. Soc., 30, #192/27.05.

32. "Turbulence in Molecular Clouds," Mac Low, M.-M., Klessen, R., Ossenkopf, V., Burkert, A., Smith, M. D., & Norman, M. 1998, Astron. Gesell. Abstr. Ser., 14, 122.

33. "Molecular Cloud Structure Analysis by Direct Simulation," Ossenkopf, V., Bensch, F., Mac Low, M.-M., & Stutzki, J. 1998, The Physics and Chemistry of the Interstellar Medium, Abstract Book of the 3rd Cologne-Zermatt Symposium, Shaker-Verlag, Aachen, 103.

34. "The Effects of Rotation and Stellar Magnetic Field in the Nebular Shapes: LBV Nebulae and PNe," García-Segura, G., Langer, N., Różyczka, M., Mac Low, M.-M., Franco, J. 1998, Rev. Mex. Astron. Astroph. Serie Conf., 7, 50.

35. "Evolution of Hypernova Remnants in the Interstellar Medium," Kim, S. Y., Mac Low, M.-M., & Chu, Y.-H. 1999, Bull. Amer. Astron. Soc., 31, 948.

36. "Hydrodynamical and MHD Turbulent Support Against Gravitational Collapse," Mac Low, M.-M., Heitsch, F., & Klessen, R. S. Bull. Amer. Astron. Soc., 31, 936.

37. "Blast Waves and Shells in the Turbulent ISM," 1999, Mac Low, M.-M. Bull. Amer. Astron. Soc., 31, 925 (invited).

38. "Hydro & MHD Turbulent Support Against Gravitational Collapse," Heitsch, F., Mac Low, M.-M., & Klessen, R. 1999, Astron. Ges. Abstr. Ser. 15, 107.

39. "The Turbulence Structure in Molecular Clouds," Ossenkopf, V., Mac Low, M.-M., Bensch, F., & Stutzki, J. 2000, Astron. Ges. Abstr. Ser. 17, 08.

40. "The Shaping of Bipolar Nebulae Around Post-Main Sequence Stars by Rotation and Magnetic Fields," Mac Low, M.-M. & García-Segura, G. 2000, Bull. Amer. Astron. Soc., 196, 47.07 (invited).

41. "Compressional Formation of Molecular Clouds in SN Driven Supersonic Turbulence," Ballesteros-Paredes, J., Avillez, M., & Mac Low, M.-M. 2000, Bull. Amer. Astron. Soc., 196, 26.08.

42. "The 3D Dynamical Structure of the Supernova-Driven Interstellar Medium," Avillez, M. A., Ballesteros-Paredes, J., & Mac Low, M.-M. 2000, Bull. Amer. Astron. Soc., 196, 26.06.

43. "Characterization of Supersonic, MHD Turbulence in Models of Molecular Clouds," Mac Low, M.-M., Ossenkopf, V., Smith, M. D., Zuev, J. M., & Heitsch, F. 2000, Bull. Amer. Astron. Soc., 196, 26.03.

44. "From Simulations to Observations: Polarization Maps of Star-Forming Regions," Heitsch, F., Zweibel, E. G., Li, P. S., Mac Low, M.-M., & Norman, M. L. 2000, Bull. Amer. Astron. Soc., 197, 05.13.

45. "Simulations of Star Formation out of a Turbulence Molecular Cloud," Li, P. S., Norman, M. L., Heitsch, F., & Mac Low, M.-M. 2000, Bull. Amer. Astron. Soc., 197, 05.02.

46. "High Resolution 3D Simulations of the Impacts of Asteroids into the Venusian Atmosphere," Korycansky, D. G., Zahnle, K. J., & Mac Low, M.-M. 2000, AAS/Division of Planetary Sciences Meeting, 32, 64.06.

47. "Modelling the Formation of HI Clouds in the Galactic Halo," Avillez, M. A. & Mac Low, M.-M. 2001, Bull. Amer. Astron. Soc., 198, 60.03

48. "Can Magnetic Fields Grow (Rapidly) Without Mean Helicity?," Balsara, D. S., Kim, J., & Mac Low, M.-M. 2001, Bull. Amer. Astron. Soc., 198, 65.08

49. "The Pressure Distribution in a Supernova-Driven Turbulent Interstellar Medium is Dynamically Determined," Mac Low, M.-M., Balsara, D. S., de Avillez, M. A., & Kim, J. 2001, Bull. Amer. Astron. Soc., 198, 65.10

50. "Cosmological Feedback and Metal Ejection from High-Redshift Dwarf Galaxies," Fujita, A., Mac Low, M.-M., Meiksin, A., & Ferrara, A. 2001, Bull. Amer. Astron. Soc., 198, 57.03

51. "Velocity Dispersion and Magnetic Energy Distribution in a Turbulent Interstellar Medium driven by Supernova," Kim, J., Balsara, D. S., & Mac Low, M.-M. 2001, Bull. Amer. Astron. Soc., 198, 65.12

52. "Mixing Time Scales in the ISM," Avillez, M. A. & Mac Low, M.-M. 2001, Astron. Ges. Abstr. Ser., 18, 02.01

53. "Molecule Destruction and Formation in Supersonic Turbulence," Smith, M. D., Pavlovski, G., Rosen, A., & Mac Low, M. 2001, Astron. Ges. Abstr. Ser., 18, 08.06

54. "Implications of Numerical Simulations of Galactic Winds for Galaxy Formation and Evolution," Mac Low, M.-M. 2001, Bull. Amer. Astron. Soc., 198, 52.04 (invited).

55. "Ion-Neutral Drift Effects in Star-Forming Regions," Mac Low, M.-M. 2002, Bull. Amer. Phys. Soc., Div. Plasma. Phys., KM1.005 (invited).

56. "Non-isothermal Turbulence in Molecular Clouds," Glover, S. C. O., Mac Low, M.-M., Smith, M. D., Pavlovski, G., & Rosen, A., 2003, Bull. Amer. Astron. Soc., 203, 111.11.

57. "Cosmological Feedback from High-Redshift Dwarf Galaxies," Fujita, A., New, K., Martin, C., Mac Low, M.-M., Ferrara, A., Meiksin, A., 2003, Int'l. Astron. Union Symposium, 217, 19.

58. "High Resolution Simulations of Globular Clusters Formation," Li, Y., Mac Low, M.-M. 2003, Extragalactic Globular Clusters and their Host Galaxies, IAU Joint Discussion 6, 27.

59. "A numerical investigation on the role of the magnetorotational instability in galactic disks," Korpi, M. J., & Mac Low, M.-M. 2003, Astron. Nach., 324, 67.

60. "Hydrodynamical Modelling of T Pyxidis," García-Segura, G., Mac Low, M.-M, & Shara, M. M. 2004, Rev. Mex. Astron. Astrofis. (Ser. Conf.), 20, 252.

61. "Formation of Star Clusters in Isolated and Merging Galaxies," Li, Y., Mac Low, M.-M., & Klessen, R. S. 2004, Bull. Amer. Astron. Soc., 205, 85.02.

62. "Non-isothermal gravoturbulent fragmentation: effects on the IMF," Jappsen, A.-K., Klessen, R. S., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, in Starbursts: From 30 Doradus to Lyman Break Galaxies. Eds. R. De Grijs, & R. M. González Delgado (Dordrecht: Springer), 31

63. "Ultracompact H II Regions Formed by Gravitational Collapse in Expanding Shells of Larger H II Regions," Mac Low, M.-M., Toraskar, J., Oishi, J. S., & Abel, T. 2005, Bull. Amer. Astron. Soc., 205, 139.08.

64. "The Inability of Ambipolar Diffusion to Set the Inner Scale of Density and Energy in Molecular Clouds," Oishi, J. S., & Mac Low, M.-M. 2005, Bull. Amer. Astron. Soc., 205, 59.07.

65. "The Lack of Influence of Metallicity on Cooling and Collapse of Ionized Gas in Small Protogalactic Halos," Jappsen, A.-K., Glover, S. C. O., Klessen, R. S., & Mac Low, M.-M. 2005, Bull. AmerȦstron. Soc., 207, 170.21.

66. "Supernova-Driven Interstellar Medium Simulations: Turbulent Pressure Distribution and Kinetic Energy Spectrum," Joung, M. K. R., & Mac Low, M.-M. 2005, Bull. Amer. Astron. Soc., 207, 195.05.

67. "Rapid formation of molecular clouds from turbulent atomic gas". Glover, S. C. O., & Mac Low M.-M. 2005, In Astrochemistry—Recent Successes and Current Challenges, eds. D. C. Lis, G. A. Blake, & E. Herbst, 160

68. "Non-isothermal gravoturbulent fragmentation: Effects on the IMF". Jappsen, A.-K., Klessen, R. S., Larson, R. B., Li, Y., & Mac Low, M.-M. 2005, Starbursts: From 30 Doradus to Lyman Break Galaxies, eds. R. de Grijs & R. M. González-Delgado (Dordrecht: Springer), 31

69. "The Textbook of the Future: What Will It Look Like?". Shipman, H. L., Finkelstein, N., McCray, D., Mac Low, M., Zollman, D., 2006, Bull. Amer. Astron. Soc. 209, 220.02

70. "Turbulent Torques on Protoplanets in a Dead Zone," Oishi, J. S., Mac Low, M.-M., & Menou, K. 2006, Bull. Amer. Astron. Soc. 209, 179.03

71. "Assessing the Influence of Metallicity on the Fragmentation of Protogalactic Gas," Jappsen, A.-K., Glover, S. C. O., Klessen, R. S., Mac Low, M.-M., Kitsionas, S. 2006, in the Universe at $z > 6$, IAU Joint Discussion 7, 24.

72. "A Traveling Exhibit of Cassini Image Science," Burns, J. A., Hedman, M. M., Tiscareno, M. S., Burns, J. K., Bilson, E. M., Schaff, N., Lovett, L. E., Ebel, D., & Mac Low, M.-M. 2007, Bull. Amer. Astron. Soc., DPS 39, 27.07.

73. "Assessing the Influence of Metallicity on the Fragmentation of Protogalactic Gas," Jappsen, A.-K., Glover, S. C. O., Klessen, R. S., Mac Low, M.-M. 2007. Highlights Astron., 14, 268.

74. "Effects of Ionization Feedback in Massive Star Formation," Peters, T., Banerjee, R., Klessen, R. S., & Mac Low, M. 2009, Bull. Amer. Astron. Soc., 213, 44.103

75. "How High Metallicity Can Trigger Planet Formation," Youdin, A., Johansen, A., & Mac Low, M.-M. 2009, Bull. Amer. Astron. Soc., DPS Meeting 41, 52.02.

76. "Modeling Solids in Astrophysical Gaseous (Fluid) Disks as Cosmochemical Indicators," Ebel, D. S., Alexander, C. M. O'D., Ciesla, F. J., Davis, A. M., Grossman, J. N., Mac Low, M.-M., Maron, J., Mendybaev, R. A., Richter, F. M., & Young, E. D. 2009, Geo. Soc. Amer., in press.

77. "The relationship between H2 and CO abundances in molecular clouds," Glover, S. C. O., & Mac Low, M.-M. 2010, in From Stars to Galaxies: Connecting our Understanding of Star and Galaxy Formation, ed. J. Tan (Gainesville: Dept. of Astronomy, U. Florida, online), 11.

78. "VariationsintheXFactorwithinGiantMolecularClouds," Shetty, R., Glover, S. C. O., Dullemond, C., Klessen, R., & Mac Low, M. 2010, in From Stars to Galaxies: Connecting our Understanding of Star and Galaxy Formation, ed. J. Tan (Gainesville: Dept. of Astronomy, U. Florida, online), 19.

79. "Control of Galactic Scale Star Formation by Gravitational Instability or Midplane Pressure?," Mac Low, M.-M. 2010, in From Stars to Galaxies: Connecting our Understanding of Star and Galaxy Formation, ed. J. Tan (Gainesville: Dept. of Astronomy, U. Florida, online), 157.

80. "'Journey to the Stars': Presenting What Stars Are to Global Planetarium Audiences by Blending Astrophysical Visualizations Into a Single Immersive Production at the American Museum of Natural History," Emmart, C., Mac Low, M.-M., Oppenheimer, B. R., Kinzler, R., Paglione, T. A. D., & Abbott, B. P. 2010, Bull. Amer. Astron. Soc., 215, 206.06

81. "What Giants Do When They Are Tickled: Energy Considerations In The Common Envelope Interaction," De Marco, O, Passy, J. C., Moe, M., Herwig, F., & Mac Low, M.-M. 2010, Bull. Amer. Astron. Soc., 215, 385.03.

82. "Planetesimal and Protoplanet Dynamics in a Turbulent Protoplanetary Disk," Yang, C.-C., & Mac Low, M.-M. 2010, Bull. Amer. Astron. Soc., 215, 367.04

83. "Saving the Earth: Orbital Migration in the Context of Disk History," Mac Low, M.-M., Lyra, W., & Paardekooper, S. 2010, Bull. Amer. Astron. Soc., 215, 367.05

84. "Are CO Observations of Interstellar Clouds Tracing the H2?" Federrath, C., Roman-Duval, J., Klessen, R. S., Schmidt, W., & Mac Low, M.-M. 2010, Bull. Amer. Astron. Soc., 215, 606.32.

85. "The Origin of the Hot Gas in the Galactic Halo: Confronting Models with XMM-Newton Observations," Shelton, R. L., Henley, D. B., Kwak, K., Joung, M., & Mac Low, M. 2010, Bull. Amer. Astron. Soc., 216, 424.04.

86. "Solenoidal versus compressive turbulence forcing," Federrath, C., Duval, J. Klessen, R. S., Schmidt, W. & Mac Low, M.-M. 2010. Highlights Astron. 15, 404.

87. "Simulating the chemistry and dynamics of molecular clouds," Glover, S. C. O., C. Federrath, M.-M. Mac Low, & R. S. Klessen. 2010, Highlights Astron. 15, 405.

88. "Formation of Molecular Clouds: The Initial Conditions for Star and Planet Formation," Mac Low, M.-M. 2010, in Disks, Meteorites, & Planetesimals (New York: LPSC Online), 6016

89. "Midplane Pressure and the Abundance of Molecular Hydrogen in Galaxies: Insights from Non-Equilibrium Chemical Models," Mac Low, M.-M., & Glover, S. C. O. 2011, Bull. Amer. Astron. Soc., 217, 216.01

90. "Time Variability in Simulated Ultracompact and Hypercompact H II Regions," Galván-Madrid, R., Peters, T., Keto, E. R., Mac Low, M.-M., Banerjee, R., & Klessen, R. S. 2011, Rev. Mex. Astron. Astrof. (Ser. Conf.), 40, 273.

91. "Mapping the Hot Gas in the Galaxy with XMM-Newton," Henley, D. B., Shelton, R. L., Kwak, K., Joung, M. R., & Mac Low, M.-M. 2011, Bull. Amer. Astron. Soc., 217, 206.01

92. "Comparisons Between SPH and Grid-Based Simulations of the Common Envelope Phase," Passy, J.-C., Fryer, C. L., Diehl, S., De Marco, O., Mac Low, M., Herwig, F., & Oishi, J. S. 2011, Bull. Amer. Astron. Soc., 217, 144.18

93. "Short Circuits in Magnetic Reconnection: A Route to Chondrule Formation," Hubbard, A., McNally, C., Mac Low, M.-M., Ebel, D. S., Oishi, J., & Maron, J. 2012. M&PSA, 75, 5395

94. "Phurbas: An Adaptive, Lagrangian, Meshless, Parallel, Magnetohydrodynamics Code," McNally, C., Maron, J. L., Mac Low, M.-M. 2012. Bull. Amer. Astron. Soc., 219, 104.06.

95. "MHD Simulations of a Supernova-driven ISM and the Warm Ionized Medium Using a Positivity Preserving Ideal MHD Scheme," Mac Low, M.-M., Hill, A. S., Joung, M. R., Waagan, K., Klingenberg, C., Wood, K., Benjamin, R. A., Federrath, C., & Haffner, L. M. 2012. ASPC, 459, 112

96. "Unique collaboration between research scientists and educators to prepare new Earth Science teachers," Pagnotta, A., Grcevich, J., Shara, M., Mac Low, M., Lepine, S., Nadeau, P., Flores, K., Sessa, J., Zirakparvar, N., Ustunisik, G., Kinzler, R., Macdonald, M., Contino, J., Cooke-Nieves, N., & Zachowski, M. 2013. Bull. Amer. Astron. Soc., 221, 433.05

97. "Dynamic UC HII regions in Sgr B2: Flickering and Ionized Flows," De Pree, C. G., Wilner, D. J., Goss, M., Mac Low, M., Peters, T., Klessen, R., Keto, E. R., Galván-Madrid, R., & Banerjee, R. 2013. Bull. Amer. Astron. Soc., 221, 349.08

98. "High-Temperature Mineral Formation by Short Circuits in Protoplanetary Disks," Mac Low, M.-M., Hubbard, A., McNally, C., Ebel, D., & D'Alessio, P. 2013. Bull. Amer. Astron. Soc., 221, 314.05

99. "Modeling Close Stellar Interactions Using Numerical and Analytical Techniques," Passy, J.-C., De Marco, O., Herwig, F., & Mac Low, M. 2013. Bull. Amer. Astron. Soc., 221, 202.02

100. "The Effect of Feedback and Reionization on Star Formation in Low-mass Dwarf Galaxy Halos," Simpson, C. M., Bryan, G., Johnston, K. V., Smith, B. D., Mac Low, M., Sharma, S., & Tumlinson, J. 2013. Bull. Amer. Astron. Soc., 221, 107.05

101. "Chondrule Formation, Complementarity, and Pervasive, Highly Local Heating by Current Sheets," Ebel, D. S., Hubbard, A., McNally, C., Mac Low, M.-M., Oishi, J., & Maron, J. 2012. M&PSA, 75, 5387

102. "Mineral Processing by Short Circuits in Protoplanetary Disks," McNally, C. P., Hubbard, A., Mac Low, M. M., Ebel, D. S., & D'Alessio, P. 2013. LPI Contributions, 1719, 2844

103. "Collaboration between research scientists and educators in implementation of a Masters program for training new Earth Science teachers in New York State," Nadeau, P. A., Flores, K. E., Zirakparvar, N. A., Grcevich, J., Ustunisik, G., Kinzler, R. J., Macdonald, M., Mathez, E., & Mac Low, M.-M. 2013, Geo. Soc. America, ED11C-0751

104. "Place-Based Teaching and Learning in an Urban Residency Earth Science Teacher Preparation Program," Kinzler, R. J., Ebel, D., Harlow, G. E., Landman, N. H., Macdonald, M., Mac Low, M.-M., Mathez, E. A., Shara, M., & Webster, J. D. 2014, Geo. Soc. America, in press.

Popular Books

"Inside Stars," Abramson, A. & Mac Low, M.-M. 2011 (New York: Sterling), 48 pp.

Popular Articles

1. "Computing the Galactic Ecology," Mac Low, M.-M., 1991, On Line [NASA Ames Computer Center Newsletter], 13, No. 6, p. 1.

2. "La Radiacion X Difusa de Burbujas Alrededor de Estrellas Wolf-Rayet," García-Segura, G., Mac Low, M.-M., Chu, Y.-H. 1993, Inst. Astr. Canarias Not., 1, 6.

3. Articles on "Planet Formation," "Planetary Systems," and "Coriolis Forces," 1996, Macmillan Encyclopedia of Physics.

4. Book Review (in German) of Relativity and Scientific Computing, 1996, Stern und Weltraum.

5. "The Virtual Universe," Mac Low, M.-M. 2000, Natural History, 109, No. 1, 88.

6. "Miscalculation" (Letter to the Editor), Mac Low, M.-M., 1999, Nature, 398, 657

7. "Astrophysical Computer Modeling," Mac Low, M.-M. 2001, in Cosmic Horizons, eds. S. Soter & N. D. Tyson (New York: New Press), 202.

8. "Critical Mass: Some Reflections," Mac Low, M.-M., 2003, in Critical Mass: Happenings, Fluxus, Performance, Intermedia and Rutgers University 1958-1972, edited by G. Hendricks (Rutgers U. Press, Rutgers, NJ), 1.

9. "Uno squardo sull vastità dell'universo," Mac Low, M.-M. 2007, in La Ragione Esigenza di Infinito, ed. G. Vittadini (Mondadori Universitá, Milan), 102

Grants

Science PI is listed first in every case.

Peer-Reviewed Science Grants

1. "Supernova Remnants Hidden in Superbubbles," Mac Low, M.-M., & Chu, Y.-H. 1993, NASA ROSAT Observation, $15 000

2. "Astronomy Wilderness Experience," Mac Low, M.-M., & Brown, B. B. 1993, NASA Astrophysical Grant Supplement for Education, $5 200

3. "Internet DuSable!," York, D. G., Brown, B. B., Mac Low, M.-M., Lauroesch, J. T., & Charleston, P. C. 1994, NASA Initiative to Develop Education through Astronomy, $20 000

4. "Mechanisms for X-ray Emissions from Superbubbles," Chu, Y.-H. & Mac Low, M.-M. 1994, NASA ROSAT Observation, $15 000

5. "Impact of Comet Shoemaker-Levy 9 on Jupiter: Modelling the First 200 Seconds," Mac Low, M.-M. & Zahnle, K. 1994, NSF Planetary Astronomy, $29 306

6. "CAREER: Structure Formation and Support by Supersonic Turbulence in the Interstellar Medium and Star-Forming Regions," Mac Low, M.-M. 2000, NSF Galactic Astronomy, $350 000

7. "Protostellar Core Formation by Supersonic MHD Turbulence," Mac Low, M.-M. 2000, NASA Astrophysical Theory Program, $153 516

8. "New Directions in Cluster Computing: A Conference at the American Museum of Natural History," Wheeler, W. C, & Mac Low, M.-M. 2001, NSF, $15 000

9. "Collaborative Research: Fireworks at the Ballet: Globular Cluster Formation, Bulge Dynamics and the Role of Central Black Holes in Galaxy Mergers," Mac Low, M.-M., & Haiman, Z. 2003, NSF Extragalactic Astronomy, $209 537

10. "Comparing Theory with Observation Using Chemical Probes of Turbulent Molecular Clouds," Glover, S. C. O., & Mac Low, M.-M. 2003, NSF Galactic Astronomy, $149 912

11. "REU Site: Research Experiences for Undergraduates in Earth Science, Planetary Science and Astrophysics at the American Museum of Natural History," Mac Low, M.-M., & Webster, J. D. 2003, NSF Research Experiences for Undergraduates, $148 850

12. "Star Formation in the Large Magellanic Cloud," Chu, Y.-H., Gruendl, R. Looney, L., Chen, R., Williams, R., Mac Low, M.-M., Hartmann, L., Calvet, N., Brandner, W., Smith, C., Points, S., Dickel, J. Spitzer Space Telescope Archival Research Program, $100 000

13. "Gas Entrainment and Shock Physics in Giant Protostellar Outflows," Arce, H., Mac Low, M.-M., & Noriega-Crespo, A. 2006, NASA Spitzer Space Telescope, $83 580

14. "Stellar Duets in Theory and Observations. Common envelopes, planetary nebulae, and the origin of close binaries," De Marco, O., & Mac Low, M.-M. 2006, NSF Galactic Astronomy, $410 019

15. "New techniques for improving the accuracy of gradients for particle and grid simulations of magnetohydrodynamic turbulence," Jason L. Maron, & Mac Low, M.-M. 2006, NSF Program on Interactions Between Mathematics and the Physical Sciences, $239 174

16. "Planetary Migration in Partially and Fully Magnetized Turbulent Disks," Mac Low, M.-M., & Menou, K. M. 2006, NASA Origins of Solar Systems Program, $192 000

17. "CDI Type I: Combined Global Physical, Chemical, and Mineralogical Models of Protoplanetary Disks," Mac Low, M.-M., Maron, J., Ebel, D. 2008, NSF Cyberenabled Discovery Initiative, $575 192

18. "Dwarf Galaxies, Abundance Distributions and the Physics of Galaxy Formation," Johnston, K., Bryan, G., Mac Low, M.-M. 2008, NSF Galactic Astronomy, subaward from Columbia U. AMNH share $17 679

19. "Dynamical Evolution of Young Clusters in Merging Galaxies," Vesperini, E., McMillan, S., Mac Low, M.-M. 2008, NASA Hubble Space Telescope, $70K

20. "Simulating Star Formation in Space and Time," Krumholz, M., Mac Low, M.-M., 2008, NASA Spitzer Science Center, AMNH share $16 888

21. "Layered accretion, vortex excitation, and planet formation in circumstellar disks," Lyra, W., & Mac Low, M.-M. 2010, NSF Stellar Astronomy, $460 911

22. "Chandra Constraints on Feedback from Starburst Winds," 2010, M.-M. Mac Low, C. Martin, NASA Chandra X-ray Center, $121 003

23. "What Controls Star Formation in Galaxies?," Mac Low, M.-M., Joung, M. K. R., Klessen, R. S., Peters, T. 2011, NSF Galactic Astronomy, $451 231

24. "Confronting Simulations of Dwarf Galaxy Formation with Observations of Resolved Stellar Populations," Bryan, G., Johnston, K., & Mac Low, M.-M., 2012, NASA Astrophysical Theory Program, $368 987

25. "Director's Discretionary Time: Ionization and Light Echoes in the T Pyxidis Nebula," Shara, M. M., Mac Low, M.-M., Toraskar, J. , Zurek, D. 2012, NASA Space Telescope Science Institute, $70 304

26. "Formation and Assembly of Massive Star Clusters," McMillan, S., Mac Low, M.-M., Olson, K., Portegies-Zwart, S. 2014, NASA Astrophysics Theory Program, $419 266

Peer Reviewed Computing and Observing Allocations since 2007

I am PI unless otherwise noted.

1. "Simulations of the formation of stars and structure of protoplanetary disks," NSF XSEDE, 3.7M CPU-hours, 2013

2. "Accretion of high-velocity gas," PI: A. S. Hill, ASTAC (Australia), 200K CPU-hours (∼$15K at commercial rates), 2012

3. "Simulations of the Formation of Stars and Planets in Disks," NSF XSEDE, 10.989M CPU-hours (∼$825K at commercial rates), 2012

4. “Planetesimal Migration in Turbulent Protoplanetary Disks,” NASA High End Computing, 3.38M CPU-hours, 2011

5. “Dynamic UC HII Regions in Sgr B2: Flickering and Ionized Flows,” Very Large Array radio telescope, 20 hours observing time, 2011

6. “Towards an Initial Mass Function of Planetesimals,” PI: A. Johansen, Partnership for Advanced Computing in Europe (PRACE), 6.2M CPU-hours, 2010

7. “Simulations of the Formation of Galaxies, Stars, and Planets,” NSF Teragrid, 11.1M CPU-hours, 2010

8. “Planetesimal Dynamics in a Turbulent Protoplanetary Disk,” NASA High End Computing, 3.26M CPU-Hours, 2009

9. “The Great Nebula in Carina: Protoplanetary Disks to Starburst Galaxies,” PI: L. Townsley, NASA Chandra X-ray Observatory, 1.2Msec observing time, 2008

10. “Astrophysical Simulation of Planet and Star Formation,” NSF Teragrid, 945K CPU-hours, 2008

11. “Planetesimal Dynamics in a Turbulent Protoplanetary Disk,” NASA High-End Computing, 1.015M CPU-hours, 2008