

Curriculum Vitae: Andrew Hamilton

Andrew J. S. Hamilton,
Fellow, JILA,
Professor, Dept. of Astrophysical and Planetary Sciences,
University of Colorado, Boulder, CO 80309.

Hamilton's professional interests include astrophysics, relativity, and cosmology.

Education

Ph.D. Astrophysics (1984) University of Virginia.

Employment History

July 2014–June 2017, Chair, Dept. of Astrophysical & Planetary Sciences, CU Boulder.

Sep 2011–present, Professor, Physics, CU Boulder (courtesy appointment).

July 2010–present, President, Black Hole Visualizations, LLC.

Jan 2009–Dec 2010, Chair, JILA.

Jan 2007–Dec 2008, Associate Chair, JILA.

July 2001–present, Professor, Dept. of Astrophysical & Planetary Sciences, CU Boulder.

Sep 2001–Aug 2002, Visiting Professor, Denver Museum of Nature and Science.

July 1993–July 2001, Assoc. Professor, APS Dept., CU Boulder.

Sep 1993–Aug 1994, Senior PPARC UK Visiting Fellow, Oxford University.

Sep 1987–present, Fellow, JILA

Aug 1986–July 1993, Assistant Professor, APS Dept., CU Boulder.

Sep 1983–Aug 1986 Lyman Spitzer Fellow in Theoretical Astrophysics, Princeton University.

Honors

Sep 2001–Aug 2002, Faculty Fellowship, CU Council of Creative Research and Work.

NSF Presidential Young Investigator, 1987–1992.

Refereed publications

1. Andrew J. S. Hamilton (2018) “Hawking radiation inside a Schwarzschild black hole” *General Relativity and Gravitation*, in press <https://arxiv.org/abs/1611.05524>.
2. Andrew J. S. Hamilton (2017) “Inflation followed by BKL collapse inside accreting, rotating black holes” *Phys. Rev. D* 96, 084041 <https://arxiv.org/abs/1703.01921>
3. Andrew J. S. Hamilton (2017) “A covariant Hamiltonian tetrad approach to numerical relativity” *Phys. Rev. D* 96, 124027 <https://arxiv.org/abs/1611.05523>
4. A. Gayler Harford, Andrew J. S. Hamilton (2017) “A Model For Intergalactic Filaments and Galaxy Formation During the First Gigayear” *Mon. Not. Roy. Astron. Soc.*, 471, 4760–4775 <https://arxiv.org/abs/1601.01737>
5. Robert A. Fesen, Kathryn E. Weil, Peter A. Hoefflich, Andrew J. Hamilton (2017) “Optical and UV Spectra of the Remnant of SN 1885 (S And) in M31” *Astrophys. J.* 848, 130 (17 pages) <https://arxiv.org/abs/1603.04895>
6. Robert A. Fesen, Peter A. Hoefflich, Andrew J. S. Hamilton (2015) “The 2D Distribution of Iron-rich Ejecta in the Remnant of SN 1885 in M31” *Astrophys. J.* 804, 140 (13 pages) <https://arxiv.org/abs/1412.3815>
7. Andrew J. S. Hamilton (2015) “Black holes are for real: horizons, black hole interiors, and singularities” invited talk, Proceedings of the conference “Relativistic Jets: Creation, Dynamics, and Internal Physics” available online at <http://www.oa.uj.edu.pl/jets2015/Program.html>

8. Andrew J. S. Hamilton (2014) “Illusory horizons, thermodynamics, and holography inside black holes” in “Relativity and Gravitation, 100 Years after Einstein in Prague” ed. Jiří Bičák & Tomáš Ledvinka, Springer Proceedings in Physics, Proceedings of a conference in Prague, Czech Republic, June 25–29, 2012 <https://arxiv.org/abs/1210.4541>
9. Andrew J. S. Hamilton (2013) “The Black Hole Particle Accelerator as a Machine to make Baby Universes” NO honorable mention in the 2013 Essay Competition of the Gravity Research Foundation.
10. Andrew J. S. Hamilton (2012) “Towards a general description of the interior structure of rotating black holes” <https://arxiv.org/abs/1108.3512>
11. Andrew J. S. Hamilton, Gavin Polhemus (2011) “The interior structure of rotating black holes 1. Concise derivation” *Phys. Rev. D* 84, 124055 <https://arxiv.org/abs/1010.1269>
12. Andrew J. S. Hamilton (2011) “The interior structure of rotating black holes 2. Uncharged black holes” *Phys. Rev. D* 84, 124056 <https://arxiv.org/abs/1010.1271>
13. Andrew J. S. Hamilton (2011) “The interior structure of rotating black holes 3. Charged black holes” *Phys. Rev. D* 84, 124057 <https://arxiv.org/abs/1010.1272>
14. P. Frank Winkler, Andrew J. S. Hamilton, Knox S. Long, Robert A. Fesen (2011) “Time Evolution of the Reverse Shock in SN 1006” *Astrophys. J.* 742, 80 <https://arxiv.org/abs/1109.0204>
15. A. Gayler Harford, Andrew J. S. Hamilton (2011) “Intergalactic Filaments as Isothermal Gas Cylinders” *MNRAS* 416, 2678–2687 <https://arxiv.org/abs/1012.1293>
16. Pedro P. Avelino, Andrew J. S. Hamilton, Carlos A. R. Herdeiro, M. Zilhão (2011) “Mass inflation in a D dimensional Reissner-Nordström black hole: a hierarchy of particle accelerators?” *Phys. Rev. D* 84, 024019 <https://arxiv.org/abs/1105.4434>
17. Andrew J. S. Hamilton, Gavin Polhemus (2010) “Stereoscopic visualization in curved spacetime: seeing deep inside a black hole” *New Journal of Physics*, 12, 123027 <https://arxiv.org/abs/1012.4043>
18. Andrew J. S. Hamilton, Pedro P. Avelino (2010) “The physics of the relativistic counter-streaming instability that drives mass inflation inside black holes” *Physics Reports*, **495** 1–32 <https://arxiv.org/abs/0811.1926>
19. Gavin Polhemus, Andrew J. S. Hamilton (2010) “Large entropy production inside black holes: a simple model” *Journal of High Energy Physics*, 2010, 093 <https://arxiv.org/abs/0903.2290>
20. Pedro P. Avelino, Andrew J. S. Hamilton, Carlos A. R. Herdeiro (2009) “Mass Inflation in Brans-Dicke gravity” *Phys. Rev. D* 79, 124045 <https://arxiv.org/abs/0904.2669>
21. Andrew J. S. Hamilton (2009) “The interior structure of slowly rotating black holes” *Class. Quantum Grav.* 26, 165006 (25 pp) <https://arxiv.org/abs/0903.2021>
22. W. Benger, A. Hamilton, M. Folk, Q. Koziol, S. Su, E. Schnetter, M. Ritter, G. Ritter (2009) “Using geometric algebra for navigation in Riemannian and hard disc space” featured presentation at the GraVisMa (Computer Graphics, Computer Vision and Mathematics) conference at Plzen, Czech Republic, September 2009 <http://gravisma.zcu.cz/>
23. Robyn Levine, Nickolay Y. Gnedin, Andrew J. S. Hamilton (2009) “Measuring gas accretion and angular momentum near simulated supermassive black holes” *Astrophys. J.* 716, 1386–1396 <https://arxiv.org/abs/1004.3785>
24. Gavin Polhemus, Andrew J. S. Hamilton, Colin S. Wallace (2009) “Entropy creation inside black holes points to observer complementarity” *Journal of High Energy Physics*, 2009, 016 <https://arxiv.org/abs/0903.2290>
25. A. Gayler Harford, Andrew J. S. Hamilton, Nickolay Y. Gnedin (2008) “Intergalactic baryon-

- rich regions at high redshift” MNRAS, 389, 880–888 <https://arxiv.org/abs/0805.2191>
26. Robyn Levine, Nickolay Y. Gnedin, Andrew J. S. Hamilton, Andrey V. Kravtsov (2008) “Resolving Gas Dynamics in the Circumnuclear Region of a Disk Galaxy in a Cosmological Simulation” *Astrophys. J.* 678, 154–167 <https://arxiv.org/abs/0711.3478>
 27. Molly E. C. Swanson, Max Tegmark, Andrew J. S. Hamilton, J. Colin Hill (2008) “Methods for Rapidly Processing Angular Masks of Next-Generation Galaxy Surveys” MNRAS, 387, 1291–1402 <https://arxiv.org/abs/0711.4352>
 28. Andrew J. S. Hamilton, Jason P. Lisle (2008) “The River Model of Black Holes” *American Journal of Physics*, 76, 519–532 <https://arxiv.org/abs/gr-qc/0411060>
 29. Andrew J. S. Hamilton, Robert A. Fesen, William P. Blair (2007) “A high resolution UV absorption spectrum of supernova ejecta in SN1006” MNRAS, 381, 771–778 <https://arxiv.org/abs/astro-ph/0602553>
 30. Robert A. Fesen, Peter A. Höflich, Andrew J. S. Hamilton, Molly C. Hammell, Christopher L. Gerardy, Alexei M. Khokhlov, J. Craig Wheeler (2007) “The Chemical Distribution in a Subluminous Type Ia Supernova: Hubble Space Telescope Images of the SN 1885 Remnant” *Astrophys. J.* 658, 396–409 <https://arxiv.org/abs/astro-ph/0611779>
 31. K. Kohler, N. Y. Gnedin, A. J. S. Hamilton (2007) “Large-Scale Simulations of Reionization” *Astrophys. J.* 657, 15–29 <https://arxiv.org/abs/astro-ph/0511627>
 32. M. Tegmark, D. Eisenstein, M. Strauss, D. Weinberg, M. Blanton, J. Frieman, M. Fukugita, J. Gunn, A. Hamilton, G. Knapp, R. Nichol, J. Ostriker, N. Padmanabhan, W. Percival, D. Schlegel, D. Schneider, R. Scoccimarro, U. Seljak, H. Seo, M. Swanson, A. Szalay, M. Vogeley, J. Yoo, I. Zehavi, and others (2006) “Cosmological Constraints from the SDSS Luminous Red Galaxies” *Phys. Rev. D*, 74, 123507 <https://arxiv.org/abs/astro-ph/0608632>
 33. C. D. Rimes, A. J. S. Hamilton (2006) “Information content of the non-linear power spectrum: the effect of beat-coupling to large scales” MNRAS, 371, 1205–1215 <https://arxiv.org/abs/astro-ph/0511418>
 34. A. J. S. Hamilton, C. D. Rimes, R. Scoccimarro (2006) “On measuring the covariance matrix of the nonlinear power spectrum from simulations” MNRAS, 371, 1188–1204 <https://arxiv.org/abs/astro-ph/0511416>
 35. P. Frank Winkler, Knox S. Long, Andrew J. S. Hamilton, Robert A. Fesen (2005) “Probing Multiple Sight Lines through the SN 1006 Remnant by Ultraviolet Absorption Spectroscopy” *Astrophysical Journal*, 624, 189–197 <https://arxiv.org/abs/astro-ph/0602555>
 36. Mark C. Neyrinck, Andrew J.S. Hamilton, Nickolay Y. Gnedin (2005) “A galaxy-halo model of large-scale structure” *Mon. Not. Roy. Astron. Soc.*, 362, 337–348 <https://arxiv.org/abs/astro-ph/0504161>
 37. Christopher D. Rimes and Andrew J. S. Hamilton (2005) “Information content of the non-linear matter power spectrum” *Mon. Not. Roy. Astron. Soc.: Letters*, 360, L82–L86 <https://arxiv.org/abs/astro-ph/0502081>
 38. Andrew J. S. Hamilton and Scott E. Pollack (2005) “Inside Charged Black Holes I. Baryons” *Physical Review D* 71, 084031, 31 pages <https://arxiv.org/abs/gr-qc/0411061>
 39. Andrew J. S. Hamilton and Scott E. Pollack (2005) “Inside Charged Black Holes II. Baryons plus Dark Matter” *Physical Review D* 71, 084032, 18 pages <https://arxiv.org/abs/gr-qc/0411062>
 40. Mark C. Neyrinck, Nickolay Y. Gnedin, and Andrew J. S. Hamilton (2005) “VOBOZ: An Almost-Parameter-Free Halo-Finding Algorithm” *Mon. Not. Roy. Astron. Soc.*, 356, 1222 <https://arxiv.org/abs/astro-ph/0402346>

41. M. Tegmark, M. Blanton, M. Strauss, F. Hoyle, D. Schlegel, R. Scoccimarro, M. Vogeley, D. Weinberg, I. Zehavi, A. Berlind, T. Budavari, A. Connolly, D. Eisenstein, D. Finkbeiner, J. Frieman, J. Gunn, A. Hamilton, L. Hui, B. Jain, D. Johnston, S. Kent, H. Lin, R. Nakajima, R. Nichol, J. Ostriker, A. Pope, R. Scranton, U. Seljak, R. Sheth, A. Stebbins, A. Szalay, I. Szapudi, L. Verde, Y. Xu, 26 others, for the SDSS Collaboration (2004) “The 3D power spectrum of galaxies from the SDSS” *Astrophysical Journal*, 606, 702–740 <https://arxiv.org/abs/astro-ph/0310725>
42. Angelica de Oliveira-Costa, Max Tegmark, Matias Zaldarriaga and Andrew Hamilton (2004) “The significance of the largest scale CMB fluctuations in WMAP” *Phys. Rev. D* 69, 063516 <https://arxiv.org/abs/astro-ph/0307282>
43. A. J. S. Hamilton and Max Tegmark (2004) “A scheme to deal accurately and efficiently with complex angular masks in galaxy surveys” *Mon. Not. Roy. Astron. Soc.*, 349, 115–128 <https://arxiv.org/abs/astro-ph/0306324>
44. Mark C. Neyrinck, Andrew J. S. Hamilton and Nickolay Y. Gnedin (2004) “Understanding the PSCz Galaxy Power Spectrum with N-body Simulations” *Mon. Not. Roy. Astron. Soc.*, 348, 1–11 <https://arxiv.org/abs/astro-ph/0302003>
45. Max Tegmark, Angelica de Oliveira-Costa and Andrew Hamilton (2003) “A high resolution foreground cleaned CMB map from WMAP” *Phys. Rev. D*, 68, 123523 (14 pages) <https://arxiv.org/abs/astro-ph/0302496>
46. Max Tegmark, Andrew J. S. Hamilton and Yongzhong Xu (2002) “The power spectrum of galaxies in the 2dF 100k redshift survey” *Mon. Not. Roy. Astron. Soc.* 335, 887–908 <https://arxiv.org/abs/astro-ph/0111575>
47. Nickolay Y. Gnedin, Andrew J. S. Hamilton (2002) “Matter Power Spectrum from the Lyman-Alpha Forest: Myth or Reality?” *Mon. Not. Roy. Astron. Soc.* 334, 107–116 <https://arxiv.org/abs/astro-ph/0111194>
48. S. Hannestad, S. H. Hansen, F. L. Villante and A. J. S. Hamilton (2002) “Constraints on inflation from CMB and Lyman-alpha forest” *Astroparticle Physics*, 17, 375–382 <https://arxiv.org/abs/astro-ph/0103047>
49. A. J. S. Hamilton and M. Tegmark (2002) “The real space power spectrum of the PSCz survey from 0.01 to 300 h/Mpc” *Mon. Not. Roy. Astron. Soc.* 330, 506–530 <https://arxiv.org/abs/astro-ph/0008392>
50. M. Tegmark, M. Zaldarriaga and A. J. S. Hamilton (2001) “Towards a refined cosmic concordance model: Joint 11-parameter constraints from CMB and large-scale structure” *Phys. Rev. D* 63, 043007–043020 <https://arxiv.org/abs/astro-ph/0008167>
51. A. J. S. Hamilton (2001) “Formulae for growth factors in expanding universes containing matter and a cosmological constant” *Mon. Not. Roy. Astron. Soc.* 322, 419–425, <https://arxiv.org/abs/astro-ph/0006089>
52. N. Padmanabhan, M. Tegmark and A. J. S. Hamilton (2001) “The power spectrum of the CfA/SSRS UZC galaxy redshift survey” *Astrophys. J.* 550, 52–64, <https://arxiv.org/abs/astro-ph/9911421>
53. A. J. S. Hamilton, M. Tegmark and N. Padmanabhan (2000) “Linear redshift distortions and power in the PSCz survey” *Mon. Not. Roy. Astron. Soc.* 317, L23–L27 <https://arxiv.org/abs/astro-ph/0004334>
54. A. J. S. Hamilton and R. A. Fesen (2000) “An Ultraviolet Fe II image of SN 1885 in M31” *Astrophys. J.* 542, 779 <https://arxiv.org/abs/astro-ph/9907102>
55. A. J. S. Hamilton and M. Tegmark (2000) “Decorrelating the power spectrum of galaxies” *Mon.*

- Not. Roy. Astron. Soc. 312, 285–294 <https://arxiv.org/abs/astro-ph/9905192>
56. A. J. S. Hamilton (2000) “Uncorrelated modes of the nonlinear power spectrum” *Mon. Not. Roy. Astron. Soc.* 312, 257–284 <https://arxiv.org/abs/astro-ph/9905191>
 57. R. A. Fesen, C. L. Gerardy, K. M. McLin and A. J. S. Hamilton (1999) “Hubble Space Telescope images and spectra of the remnant of SN 1885 in M31” *Astrophys. J.* 514, 195–201 <https://arxiv.org/abs/astro-ph/9810002>
 58. M. Tegmark, A. J. S. Hamilton, M. A. Strauss, M. S. Vogeley and A. S. Szalay (1998) “Measuring the galaxy power spectrum with future redshift surveys” *Astrophys. J.* 499, 555–576 <https://arxiv.org/abs/astro-ph/9708020>
 59. A. J. S. Hamilton (1998) “Linear Redshift Distortions: A Review” invited review in “The Evolving Universe” Proceedings of the Ringberg Workshop on Large-Scale Structure, held at Ringberg Castle, Germany, 23-28 September 1996, ed. D. Hamilton, Kluwer Academic, Dordrecht, 185–275 <https://arxiv.org/abs/astro-ph/9708102>
 60. A. J. S. Hamilton (1997) “Towards optimal measurement of power spectra II: a basis of positive, compact, statistically orthogonal kernels” *Mon. Not. Roy. Astron. Soc.* 289, 295–304 <https://arxiv.org/abs/astro-ph/9701009>
 61. A. J. S. Hamilton (1997) “Towards optimal measurement of power spectra I: Minimum variance pair weighting and the Fisher matrix” *Mon. Not. Roy. Astron. Soc.* 289, 285–294 <https://arxiv.org/abs/astro-ph/9701008>
 62. C.-C. Wu, D. M. Crenshaw, A. J. S. Hamilton, R. Fesen, M. Leventhal and C. L. Sarazin (1997) “Far-UV absorption lines in the remnant of SN 1006” *Astrophys. J.* 477, L53–56 <https://arxiv.org/abs/astro-ph/9701048>
 63. A. J. S. Hamilton, R. A. Fesen, C.-C. Wu, D. M. Crenshaw, and C. L. Sarazin (1997) “Interpretation of UV absorption lines in SN1006” *Astrophys. J.* 481, 838–856 <https://arxiv.org/abs/astro-ph/9609096>
 64. A. N. Taylor and A. J. S. Hamilton (1996) “Nonlinear cosmological power spectra in real and redshift space” *Mon. Not. Roy. Astron. Soc.* 282, 767–778 <https://arxiv.org/abs/astro-ph/9604020>
 65. A. J. S. Hamilton and M. Culhane (1996) “Spherical redshift distortions” *Mon. Not. Roy. Astron. Soc.* 278, 73–86 <https://arxiv.org/abs/astro-ph/9507021>
 66. A. J. S. Hamilton (1995) “Redshift Distortions and Omega in IRAS Surveys” invited review in “Clustering in the Universe”, Proc. XXXth Rencontres Moriond, held at Les Arcs, France, 11-18 March 1995, ed. S. Maurogordato, C. Balkowski, C. Tao & J. Tran Thanh Van, Editions Frontières, 143–155 <https://arxiv.org/abs/astro-ph/9507022>
 67. E. Bertschinger and A. J. S. Hamilton (1994) “Lagrangian evolution of the Weyl tensor” *Astrophys. J.* 435, 1–7 <https://arxiv.org/abs/astro-ph/9403016>
 68. A. J. S. Hamilton (1993) “Towards better ways to measure the galaxy correlation function” *Astrophys. J.* 417, 19–35
 69. C.-C. Wu, D. M. Crenshaw, R. A. Fesen, A. J. S. Hamilton and C. L. Sarazin (1993) “Faint Object Spectrograph spectra of the broad Fe II absorption lines in the remnant of SN 1006” *Astrophys. J.* 416, 247–250
 70. A. J. S. Hamilton (1993) “Omega from the anisotropy of the redshift correlation function in the IRAS 2 Jansky survey” *Astrophys. J. (Letters)* 406, L47–50,
 71. A. J. S. Hamilton (1992) “Measuring Omega and the real correlation function from the redshift correlation function” *Astrophys. J. (Letters)* 385, L5–8
 72. A. J. S. Hamilton, P. Kumar, E. Lu and A. Matthews (1991) “Reconstructing the primordial

- spectrum of fluctuations of the Universe from the observed nonlinear clustering of galaxies” *Astrophys. J. (Letters)* 374, L1–4; erratum in *Astrophys. J. (Letters)* 442, L73 (1995)
73. D. A. Leahy, J. Nousek and A. J. S. Hamilton (1991) “HEAO-1 A2 low energy detector X-ray spectra of the Lupus Loop and SN 1006” *Astrophys. J.* 374, 218–226
 74. A. L. Melott, A. P. Cohen, A. J. S. Hamilton, J. R. Gott III and D. H. Weinberg (1989) “Topology of large scale structure IV: Topology in two dimensions” *Astrophys. J.* 345, 618–626
 75. R. A. Fesen, A. J. S. Hamilton and J. M. Saken (1989) “Discovery of the remnant of S Andromedae (SN 1885) in M31” *Astrophys. J. (Letters)* 341, L55–57
 76. J. R. Gott III, J. Miller, T. X. Thuan, S. E. Schneider, D. H. Weinberg, C. Gammie, K. Polk, M. Vogeley, S. Jeffrey, S. P. Bhavsar, A. L. Melott, R. Giovanelli, M. P. Haynes, R. B. Tully and A. J. S. Hamilton (1989) “The topology of large-scale structure. III. Analysis of observations” *Astrophys. J.* 340, 625–646
 77. A. J. S. Hamilton (1988) “On hierarchial solutions to the BBGKY hierarchy” *Astrophys. J.* 332, 67–74
 78. A. J. S. Hamilton and J. R. Gott III (1988) “Cluster-cluster correlations and constraints on the correlation hierarchy” *Astrophys. J.* 331, 641–647
 79. A. J. S. Hamilton (1988) “Evidence for biasing in the CfA survey” *Astrophys. J. (Letters)* 331, L59–62
 80. A. J. S. Hamilton and R. A. Fesen (1988) “The reionization of unshocked ejecta in SN 1006” *Astrophys. J.* 327, 178–196
 81. R. A. Fesen, C.-C. Wu, M. Leventhal and A. J. S. Hamilton (1988) “High-velocity ultraviolet iron, silicon, oxygen and sulfur absorption features associated with the remnant of SN 1006” *Astrophys. J.* 327, 164–177
 82. A. J. S. Hamilton, J. R. Gott III and D. Weinberg (1986) “The topology of the large-scale structure of the Universe” *Astrophys. J.* 309, 1–12
 83. A. J. S. Hamilton, C. L. Sarazin and A. E. Szymkowiak (1986) “The X-ray spectrum of Tycho” *Astrophys. J.* 300, 713–721
 84. A. J. S. Hamilton, C. L. Sarazin and A. E. Szymkowiak (1986) “The X-ray spectrum of SN 1006” *Astrophys. J.* 300, 698–712
 85. A. J. S. Hamilton, C. L. Sarazin, A. E. Szymkowiak and M. H. Vartanian (1985) “X-ray spectra of young type I supernova remnants: Exploded white dwarfs?” *Astrophys. J. (Letters)* 297, L5–L9
 86. A. J. S. Hamilton, W. C. Saslaw and T. X. Thuan (1985) “Thermodynamics and galaxy clustering: Analysis of the Center for Astrophysics redshift catalog” *Astrophys. J.* 297, 37–48
 87. A. J. S. Hamilton (1985) “Galaxy clustering and the method of voids” *Astrophys. J. (Letters)* 292, L35–L38
 88. A. J. S. Hamilton (1985) “Similarity solutions for the structure of supernova blast waves driven by clumped ejecta I. Undecelerated clumps” *Astrophys. J.* 291, 523–543
 89. A. J. S. Hamilton and C. L. Sarazin (1984) “Heating and cooling in reverse shocks in pure heavy element supernova ejecta” *Astrophys. J.* 287, 282–294
 90. A. J. S. Hamilton and C. L. Sarazin (1984) “X-ray emission from supernova remnants II. The effect of remnant structure on nonequilibrium X-ray spectra” *Astrophys. J.* 284, 601–611
 91. A. J. S. Hamilton and C. L. Sarazin (1984) “A new similarity solution for reverse shocks in supernova remnants” *Astrophys. J.* 281, 682–689
 92. W. C. Saslaw and A. J. S. Hamilton (1984) “Thermodynamics and galaxy clustering: Nonlinear theory of high order correlations” *Astrophys. J.* 276, 13–25

93. A. J. S. Hamilton and C. L. Sarazin (1983) “Deceleration of grand unified theory monopoles in a plasma” *Astrophys. J.* 274, 399–407
94. A. J. S. Hamilton, C. L. Sarazin and R. A. Chevalier (1983) “X-ray line emission from supernova remnants I. Models for adiabatic remnants” *Astrophys. J. Suppl.* 51, 115–148
95. A. J. S. Hamilton and C. L. Sarazin (1982) “Gravitational spin precession in binary systems” *Mon. Not. Roy. Astron. Soc.* 198, 59–70
96. A. J. S. Hamilton (1976) “The triangulation of 3-manifolds” *Quart. J. Math. Oxford* (2), 27, 63–70

Media publications

The proposer is known for his scientifically accurate general relativistic visualizations of black holes, which have appeared in various venues.

1. “What happens to you if you fall into a black hole?” (2016) BBC Earth video <http://www.bbc.com/earth/story/20160429-what-happens-to-you-if-you-fall-into-a-black-hole>
2. “Future Earth” (2015) documentary <https://www.youtube.com/watch?v=X8rFs1TFrYk>
3. “Das grösste Loch des Universums” (2013) 2/13 edition of *Welt der Wunder*.
4. “Science Fiction in Deutschland” (2013) Exhibition, 23 Nov 2012–1 Apr 2013, <http://www.hdg.de/bonn/ausstellungen/wechselausstellungen/ausstellungen/science-fiction-in-deutschland/>
5. “What an astronaut sees when they cross the event horizon” (translation from Polish) (2012) *Swiat Nauki* (Scientific American Polish Edition).
6. “Schrödingers katt 26.04.12” (2012) NRK (Norwegian TV).
7. “What a trip through a wormhole would look like” (2012) New Scientist featured video. Ranked seventh in New Scientist’s best videos of 2012.
8. “Fabric of the Cosmos” (2011) four-part NOVA PBS series with Brian Greene on the nature of space and time.
9. “Black Hole 1” (2011) episode of NHK’s (Japan Broadcasting Corporation’s) “Cosmic Front” series.
10. “Beginning of the End” (2011) 23 June episode of National Geographic Channel’s “Known Universe” series.
11. “Beyond the Event Horizon” (2011) by Steve Nadis, cover article for June 2011 issue of *Discover* magazine.
12. “Black Hole Odyssey” (2010) series 2, episode 8 of Discovery Channel’s “Sci Fi Science: Physics of the Impossible” with Michio Kaku.
13. “Black Holes and Holographic Worlds” streamed live from the 2010 World Science Festival in New York https://www.youtube.com/watch?v=7f9d7XZu8UQ&list=PLKy-B3Qf_RDV0Nxj-XsfgqUBbuMdG0dGUindex=5
14. “How the Universe Works: Black Holes” (2010) TV documentary, Discovery Channel.
15. “Inside Black Holes” (2010) website jila.colorado.edu/~ajsh/insidebh/
16. “Black Holes Explained” (2009) Educational DVD by Alex Filippenko, published by The Teaching Company.
17. “Black Holes: Space Warps & Time Twists” (2009) Museum exhibit, Boston Museum of Science.
18. “Astronomers take virtual plunge into black hole” (2009) CNN featured video.
19. “What would it look like to fall into a black hole?” (2009) New Scientist featured video. According to James Urquhart, web video producer at New Scientist, this was New Scientist’s number one most popular video of 2009. Posted on YouTube.
20. “Monster Black Holes” (2008) National Geographic “Naked Science” series.

21. "Monster of the Milky Way" (2006) NOVA PBS documentary on black holes.
22. "Black Holes: The Other Side of Infinity" (2006) Immersive digital dome show produced by the Denver Museum of Nature and Science. Distributed by Spitz, Inc.