

Curriculum Vitae

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Current Position

Ramón y Cajal Fellow (tenure-track), Universidad Complutense de Madrid

Education

2004 Ph.D., Astronomy, Columbia University
Thesis: *Gamma-Ray Burst Progenitors and Environments*
Advisor: Prof. Jules P. Halpern
2001 Master of Philosophy, Astronomy, Columbia University
1998 Bachelor's Degree of Science in Astronomy and Physics,
University of Michigan
Honors Thesis: *Optical Study of Rotation-Driven Pulsars
using an Ultrafast Optical Photometer*

Teaching Activity

2009–present Introductory Physics (Undergraduate), Universidad Complutense de Madrid
2009–present Astroparticle Physics (Graduate), Universidad Complutense de Madrid
1998–2001 Introductory Astronomy Laboratory, Columbia University
1997–1998 Tutor for Introductory Physics, University of Michigan

Professional Activities

Member, CTA-PHYS and CTA-LST working packages
Referee, *The Astronomical Journal*; *Astronomy & Astrophysics*; *The Astrophysical Journal*
Referee, *The Astrophysical Journal Letters*; *Science*
Reviewer, NASA Astronomy and Physics Research and Analysis Panel

List of Publications

Refereed Articles

1. *Design Concepts for the Cherenkov Telescope Array*, The CTA Consortium 2011, Experimental Astronomy, in press (arXiv:1008.3703)
2. *Swift observation of Segue 1: constraints on sterile neutrino parameters in the darkest galaxy*
Mirabal, N. 2010, MNRAS, 409, L128
3. *The Afterglows of Swift-era Gamma-Ray Bursts. I. Comparing pre-Swift and Swift era Long/Soft (Type II) GRB Optical Afterglows*
Kann, D. A., et al. 2010, ApJ, 720, 1513
4. *Large-scale HI in nearby radio galaxies (II): the nature of classical low-power radio sources*
Emonts, B. H. C., et al. 2010, MNRAS, 406, 987
5. *Correlating Fermi gamma-ray sources with ultra-high energy cosmic rays*
Mirabal, N. & Oya, I. 2010, MNRAS, 405, L99
6. *A Search for Pulsations from the Compact Object of GRB 060218*
Mirabal, N. & Gotthelf, E. V. 2010, A&A, 511, 65
7. *A Curious Source of Extended X-ray Emission in the Outskirts of Globular Cluster GLIMPSE-C01*
Mirabal, N. 2010, MNRAS, 402, 1391
8. *0FGL J1830.3+0617: A Fermi Blazar Near the Galactic Plane*
Mirabal, N., & Halpern, J. P. 2009, ApJ, 701, L129
9. *The Rapidly Flaring Afterglow of the Very Bright and Energetic GRB 070125*
Updike, A. C., et al. 2008, ApJ, 685, 361
10. *Discovery of a Very Bright, Nearby Gravitational Microlensing Event*
Gaudi, B. S., et al. 2008, ApJ, 677, 1268
11. *Echo Emission from Dust Scattering and X-Ray Afterglow of Gamma-Ray Bursts*
Shao, L., Dai, Z. G., & **Mirabal, N.** 2008, ApJ, 675, 507
12. *The WEBT Campaign on the Blazar 3C 279 in 2006*
Böttcher, M., et al. 2007, ApJ, 670, 968
13. *The Merger in Abell 576: A Line of Sight Bullet Cluster?*
Dupke, R. A., **Mirabal, N.**, Bregman, J. N., & Evrard, A. E. 2007, ApJ, 668, 781
14. *GRB 050826: A Subluminous Event at $z = 0.296$ Finds its Place in the Luminosity Distribution of Gamma-Ray Burst Afterglows*
Mirabal, N., Halpern, J. P., & O'Brien, P. T. 2007, ApJ, 661, L127

15. *The Nature of the X-Ray Flash of August 24 2005. Photometric evidence for an on-axis $z = 0.83$ burst with continuous energy injection and an associated supernova?*
Sollerman, J., et al. 2007, *A&A*, 466, 839
16. *Optical and X-Ray Observations of GRB 060526: A Complex Afterglow with An Achromatic Jet Break*
Dai, X., Halpern, J. P., Morgan, N. D., Armstrong, E., **Mirabal, N.**, Haislip, J. B., Reichart, D. E., & Stanek, K. Z. 2007, *ApJ*, 658, 509
17. *Exploring Broadband GRB Behavior during γ -ray Emission*
Yost, S. A., et al. 2007, *ApJ*, 657, 925
18. *GRB 060218/SN 2006aj: A Gamma-Ray Burst and Prompt Supernova at $z = 0.0335$*
Mirabal, N., Halpern, J. P., An, D., Thorstensen, J. R., & Terndrup, D. M. 2006, *ApJ*, 643, L99
19. *Optical Light Curve & Cooling Break of GRB050502a*
Yost, S. A., et al. 2006, *ApJ*, 636, 959
20. *Coordinated Multiwavelength Observations of 3C 66A during the WEBT Campaign of 2003–2004*
Böttcher, M., et al. 2005, *ApJ*, 631, 169
21. *The X-Ray Afterglow of Dark GRB 970815: A Common Origin for Gamma-Ray Bursts and X-Ray Flashes?*
Mirabal, N., Halpern, J. P., Gotthelf, E. V., & Mukherjee, R. 2005, *ApJ*, 620, 379
22. *Probing the energetics of X-ray Flashes with afterglow observations of the nearest event: XRF020903*
Soderberg, A. M., et al. 2004, *ApJ*, 606, 994
23. *The Detailed Optical Light Curve of GRB 030329*
Lipkin, Y. M., et al. 2004, *ApJ*, 606, 381
24. *GRB 021004: A Possible Shell Nebula Around a Wolf-Rayet Star Gamma-Ray Burst Progenitor*
Mirabal, N., Halpern, J. P., Chornock, R., Filippenko, A. V., Terndrup, D. M., Armstrong, E., Kemp, J., Thorstensen, J. R., Tavarez, M., & Espaillat, C. 2003, *ApJ*, 595, 935
25. *Search for a Point-Source Counterpart of the Unidentified Gamma-Ray Source TeV J2032+4130 in Cygnus*
Mukherjee, R., Halpern, J. P., Gotthelf, E. V., Eracleous, M., & **Mirabal, N.** 2003, *ApJ*, 589, 487
26. *High-Resolution Grating Spectroscopy of GRB 020405 with the Chandra Low Energy Transmission Grating Spectrometer*
Mirabal, N., Paerels, F., & Halpern, J. P. 2003, *ApJ*, 587, 128

27. *Time-Dependent Optical Spectroscopy of GRB 010222: Clues to the GRB Environment*
Mirabal, N., Halpern, J. P., Kulkarni, S. R., Castro, S., Bloom, J. S., Djorgovski, S. G., Galama, T. J., Harrison, F. A., Frail, D. A., Price, P. A., Reichart, D. E., Ebeling, H., Bunker, A., Dawson, S., Dey, A., Spinrad, H., & Stern, D. 2002, *ApJ*, 578, 818
28. *Is the EGRET Source 3EG J1621+8203 the Radio Galaxy NGC 6251?*
Mukherjee, R., Halpern, J., **Mirabal, N.**, & Gotthelf, E. V. 2002, *ApJ*, 574, 693
29. *Discovery of a 136 Millisecond Radio and X-Ray Pulsar in Supernova Remnant G54.1+0.3*
Camilo, F., Lorimer, D. R., Bhat, N. D. R., Gotthelf, E. V., Halpern, J. P., Wang, Q. D., Lu, F. J., & **Mirabal, N.** 2002, *ApJ*, 574, L71
30. *The 2001 Superoutburst of WZ Sagittae*
Patterson, J., et al. 2002, *PASP*, 114, 721
31. *The Next Geminga: Deep Multiwavelength Observations of a Neutron Star Identified with 3EG J1835+5918*
Halpern, J. P., Gotthelf, E. V., **Mirabal, N.**, & Camilo, F. 2002, *ApJ*, 573, L41
32. *GRB 000418: A Hidden Jet Revealed*
Berger, E., et al., 2001, *ApJ*, 556, 556
33. *Multicolor Observations of the GRB 000926 Afterglow*
Price, P. A., et al. 2001, *ApJ*, 549, L7
34. *A Neutron-Star Identification for the High-Energy Gamma-Ray Source 3EG J1835+5918 Detected in the ROSAT All-Sky Survey*
Mirabal, N., & Halpern, J. P. 2001, *ApJ*, 547, L137
35. *GRB 991216 Joins the Jet Set: Discovery and Monitoring of its Optical Afterglow*
Halpern, J. P., Uglesich, R., **Mirabal, N.**, Kassin, S., Thorstensen, J., Keel, W. C., Diercks, A., Bloom, J. S., Harrison, F., Mattox, J., & Eracleous, M. 2000, *ApJ*, 543, 697
36. *Search for the Identification of 3EG J1835+5918: Evidence for a New Type of High-Energy Gamma-Ray Source*
Mirabal, N., Halpern, J. P., Eracleous, M., & Becker, R. H. 2000, *ApJ*, 541, 180
37. *Discovery of a Tidal Extension of the Sagittarius Dwarf Spheroidal Galaxy*
Mateo, M., **Mirabal, N.**, Udalski, A., Szymanski, M., Kaluzny, J., Kubiak, M., Krzeminski, W., & Stanek, K. Z. 1996, *ApJ*, 458, L13

Internal notes, Preprints, and Proceedings

- On the Detectability of Dwarf Galaxies with the Cherenkov Telescope Array*, Nieto, D., Hassan, T., **Mirabal, N.**, Barrio, J. A., Contreras, J. L. for the CTA Consortium 2011, Proceedings of the 32nd International Cosmic Ray Conference(arXiv:1111.2183)
- A search for possible dark matter subhalos as IACTs targets in the Fermi LAT source catalog*, Nieto, D., et al. 2011, Proceedings of the 2011 Fermi Symposium (arXiv:1110.4744)
- The search for galactic dark matter clump candidates with Fermi and MAGIC*, Nieto, D., et al. 2011, Proceedings of the 32nd International Cosmic Ray Conference (arXiv:1109.5935)
- The exotic fraction among unassociated Fermi sources*, **Mirabal, N.**, et al. 2010 (arXiv:1007.2644)
- Willman 1: An X-ray shot in the dark with Chandra*, Nieto, D. & **Mirabal, N.** 2010 (arXiv:1003.3745)
- A Point-Source Catalog from Swift Observations of Unidentified Fermi Sources*, **Mirabal, N.** 2009 (arXiv:0908.1389)
- Can a simple instrument measure polarization in gamma-ray bursts?*, Curioni A. & **Mirabal, N.** 2004 (arXiv: astro-ph/0402596)

Circulars

- The Gamma-ray Burst Network (GCN) Circulars #: 395,397,423,472,578,582, 585,646, 650,651,653,663,806,824,829,1079,1126,1127,1139,1186,1187,1208,1294, 1296,1352,1554, 1593,1602,1618,2021,2273,2837,3363,3488,3530,3541,3907,4202, 415,4591,4623,4749,4783, 4784,4792,5034,5046,5066,5072,5086,5097,5098,5176, 5188,5771,5840,5847,5906,5925, 5982,6075,5082,6096,6097,6126,6146,6162,6221, 6526,6534,9655,9696
- The Astronomer's Telegram (ATel) #: 709,757,767,942
- Central Bureau for Astronomical Telegrams (CBET) #: 409