

CURRICULUM VITAE

DALE ANDREW FRAIL

National Radio Astronomy Observatory
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Education: 1989 — Ph.D. in Astronomy, University of Toronto
1985 — M.Sc. in Astronomy, University of Toronto

Current Position: NRAO Astronomer (tenured)

Research Interests:

- the origin of gamma ray bursts and soft gamma ray repeaters
- time-domain astronomy with an emphasis on the dynamic radio sky
- the missing baryon problem and the warm-hot intergalactic medium
- pulsars, supernova remnant associations and pulsar wind nebulae
- the 1720 MHz OH maser line toward supernova remnants
- HI absorption and interstellar scattering

Professional Experience:

- 2011– Assistant Director, New Mexico Operations
- 2011 Visiting Scientist, Harvard Smithsonian Center for Astrophysics (CfA)
- 2010 Visiting Scientist, Weizmann Institute of Science
- 2006–2009 Assistant Director, Science and Academic Affairs, NRAO
- 2001–2002 Visiting Associate in Astronomy, Caltech
- 1999– Astronomer, NRAO
- 1995–1999 Associate Astronomer, NRAO
- 1993–1995 Assistant Astronomer, NRAO
- 1990–1993 Jansky Fellow, NRAO
- 1989–1991 NSERC Postdoctoral Fellow

Professional and NRAO Service:

- 2011 External Examiner. Caltech. PhD Thesis. Mansi Kasliwal
- Promotions Review for Harvard
- Tenure Review for the University Colorado Boulder
- Co-investigator on SWIFT (NASA Midex mission)
- Tenure Review for the Pennsylvania State Colleg
- Fermi User Community
- Referee for GMRT
- Referee for Nature, MNRAS
- 2010 Tenure Review for the University of California Berkeley
- Tenure Review for the University Nevada Las Vegas
- NSERC grant Review (Canada)
- High Energy Astrophysics Executive Committee of AAS
- Referee for Advances in Space Research
- Member, NRAO Observatory Science Council
- Member, NRAO Observatory Science Operations Working Group

**Professional
and NRAO****Service (cont'd):**

- 2009 Assistant Director, Science and Academic Affairs (SAA)
 Cycle 17 HST Proposal Review
 High Energy Astrophysics Executive Committee of AAS
 Referee for GMRT and LLNL
 Space Interferometry Mission Advisory Panel
 Grants Review for Italian Space Agency (ASI)
 Chair, NRAO Observatory Science Council
 NRAO Diversity Committee
 NRAO Distinguished Service Committee
- 2008 Assistant Director, Science and Academic Affairs (SAA)
 Chair, NRAO Observatory Science Council
 Tenure Review for the University of Colorado
 NRAO Diversity Committee
 NRAO Distinguished Service Committee
 High Energy Astrophysics Executive Committee of AAS
 Referee for JCMT
 Grant Review for Israel Science Foundation
 Grants Review for Italian Space Agency (ASI)
- 2007 Assistant Director, Science and Academic Affairs (SAA)
 Chair, NRAO Observatory Science Council
 NRAO Diversity Committee
 NRAO Distinguished Service Committee
 Outside tenure reviewer for University North Carolina
 Proposal review for Research Corporation
 NSF Astronomy & Astrophysics Postdoc Fellowship Panel
 Proposal review for Italian National Institute for Astrophysics (IASF)
 Referee for GRMT
- 2006 Assistant Director, Science and Academic Affairs (SAA)
 Chair, Chandra Postdoctoral Selection Committee
 NRAO Observatory Science Council
 VLA/EVLA Transition Committee (VCSS)
 GreenBank Telescope Scheduling Committee
- 2005 NRAO Astronomer Performance Review Committee (APRC)
 (Interim) EVLA Project Scientist for Software
 Project Scientist for NRAO Proposal Submission Tool
 AOC Colloquium Committee, Chair
 NRAO Observatory Science Council
 VLA/EVLA Transition Committee (VCSS)
 GreenBank Telescope Scheduling Committee
 NRAO e2e Oversight Committee
 Co-investigator on SWIFT (NASA Midex mission)
- 2004 Observatory Committee for Tenure and Appointments
 Project Scientist for NRAO Proposal Submission Tool
 AOC Colloquium Committee, Chair
 NRAO Observatory Science Council
 NRAO e2e Oversight Committee
 Caltech PhD Committee (Edo Berger)
 GreenBank Telescope Scheduling Committee
 Chandra Postdoctoral Selection Committee
 Co-investigator on SWIFT (NASA Midex mission)
 Grant review for NASA
 NRAO Joint Proposal Committee, co-chair

- Societies and Organizations:** High Energy Astrophysics Division of AAS (HEAD)
International Astronomical Union (IAU)
American Astronomical Society (AAS)
- Science Organizing Committees:**
- May 2011 2011 Fermi Symposium, Rome, Italy
 - Mar. 2011 Co-organizer of “Building on New Words, New Horizons”, Santa Fe
 - Jan. 2011 Co-organizer of AAS HEAD Special Session
 - Mar. 2010 Co-organizer High Energy Astrophysics Division Meeting, Hawaii
 - Apr. 2009 Co-organizer NRAO Postdoctoral Symposium, Socorro
 - Apr. 2008 NRAO Scientific Staff Retreat. Futures Planning, Socorro
 - Mar. 2008 High Energy Astrophysics Meeting, Los Angeles
 - Aug. 2006 “Building a Foundation for US Astronomy at m/cm Wavelengths in 2010 and Beyond, Tucson”
 - May 2006 “NRAO Legacy Project Workshop, Socorro”
 - Oct. 2004 “Gamma-Ray Bursts in the Afterglow Era”, Rome
 - Jul. 2004 Paris COSPAR Conference, Special GRB Session (E1.1)
 - Jan. 2004 Co-organizer of AAS/HEAD topical session on *Swift*
 - Sep. 2003 GRB Conference, “30 Years of Discovery”
 - Jul. 2003 Chair of Parallel Session at Tenth Marcel Grossmann Meeting
 - May 2003 Co-organizer of AAS (Nasville) topical session
 - Oct. 2002 34th COSPAR Conference, “GRB Afterglow Physics”
 - Sep. 2002 “Gamma-Ray Bursts in the Afterglow Era”, Rome
 - Sep. 2000 “The Nature of Galactic High Energy Gamma-Ray Sources”
 - Jul. 2000 IX Marcel Grossman Meeting, co-Chair Gamma-Ray Burst Session
 - Apr. 2000 IAU Coll. 182, “Sources and Scintillations: Refraction and Scattering in Radio Astronomy”
- Students Supervised:**
- 2008 Ben Breslauer (Oberlin College)
 - 2004 P. Brian Cameron (Caltech; PhD)
 - 2003 Alicia Soderberg (Caltech; PhD)
 - 2002 Brian Metzger (Iowa)
 - 2000 Kathryn Becker (Oberlin)
 - 2000 Edo Berger (Caltech; PhD)
 - 1999 Chad Young (Mississippi)
 - 1999 Crystal Brogan (Kentucky; PhD)
 - 1998 Josh Bloom (Caltech; PhD)
 - 1998 Katrina Koski (NMIMT)
 - 1997 Barron Koralesky (Minnesota; PhD)
 - 1996 Craig Heinke (Carleton)
 - 1995 Chris Carpenter (Harvard)
 - 1994 Britt Scharringhausen (Iowa)
 - 1993 Tas Philp (North Carolina; PhD)
 - 1992 David Moffett (NMIMT; PhD)
 - 1990 Henry (“Chip”) Kobulnicky (Iowa)
- Honours and Awards:**
- 2010 John Simon Guggenheim Fellowship
 - 2009 Maria & Eric Muhlmann Award, Astronomical Society of the Pacific, Swift Team
 - 2007 Bruno Rossi Prize, American Astronomical Society, with the Swift Team

Publications:

222. Wygoda, N, Waxman, E. and D. A. Frail
Relativistic Jet Dynamics and Calorimetry of Gamma-Ray Bursts
2011, ApJ, submitted
221. Ofek, E. O. and Frail, D. A.
The Structure Function of Variable 1.4 GHz Radio Sources Based on NVSS and FIRST Observations
2011, ApJ, submitted
220. Ofek, E. O., Frail, D. A., Kulkarni, S. R., Chandra, P., Breslauer, B., Gal-Yam, A., Kasliwal, M. M. and Gehrels, N.
A VLA search for 5 GHz radio transients and variables in low Galactic latitudes
2011, ApJ, submitted
219. A.J. Drake, S.G. Djorgovski, A. Mahabal, J. Anderson, R. Roy, V. Mohan, S. Ravindranath D. Frail, S. Gezari, James D. Neill, L.C. Ho, J.L. Prieto, D. Thompson, J. Thorstensen, M. Wagner, R. Kowalski, J. Chiang, J.E. Grove, F.K. Schinzel, D.L. Wood, L. Carrasco, E. Recillas, L. Kewley, K.N. Archana, Aritra, Basu, Yogesh, Wadadekar, Brijesh Kumar, A.D. Myers R. Williams, M.J. Graham, M. Catelan, E. Beshore, S. Larson, E. Christensen
The Discovery and Nature of Optical Transient CSS100217:102913+404220
2011, ApJ, submitted
218. Corsi, A., Ofek, E. O., Frail, D. A., Poznanski, D., Arcavi, I., Gal-Yam, A., Kulkarni, S. R., Hurley, K., Mazzali, P. A., Howell, D. A., Kasliwal, M. M., Green, Y., Murray, D., Xu, D., Ben-ami, S., Bloom, J. S., Cenko, B., Law, N. M., Nugent, P., Quimby, R. M., Pal'shin, V., Cummings, J., Connaughton, V., Yamaoka, K., Rau, A., Boynton, W., Mitrofanov, I., and Goldsten, J. *PTF 10bzf (SN 2010ah): a broad-line Ic supernova discovered by the Palomar Transient Factory*
2011, ApJ submitted, astro-ph/1101.4208

Publications

- (cont'd): 217. Kasliwal, M. M., Kulkarni, S. R., Quimby, R. M., Ofek, E. O., Nugent, P., Jacobsen, J., Gal-Yam, A., Green, Y., Arcavi, I., Yaron, O., Howell, J. L., Fox, D. B., Cenko, S. B., Kleiser, I., Bloom, J. S., Miller, A., Poznanski, D., Li, W., Filippenko, A. V., Starr, D., Law, N. M., Helou, G., Frail, D. A., Neill, J. D., Forster, K., Martin, D. C., Tendulkar, S. P., Gehrels, N., Kennea, J., Sullivan, M., Dekany, R., Rahmer, G., Hale, D., Smith, R., Zolkower, J., Velur, V., Walters, R., Henning, J., Bui, K., McKenna, D., and Blake, C.
PTF10fqz: A Luminous Red Nova in the Spiral Galaxy Messier 99
2011, in press; astro-ph/1005.1455
216. Cenko, S. B., Butler, N. R., Ofek, E. O., Perley, D. A., Morgan, A. N., Frail, D. A., Gorosabel, J., Bloom, J. S., Castro-Tirado, A. J., Cepa, J., Chandra, P., de Ugarte Postigo, A., Filippenko, A. V., Klein, C. R., Kulkarni, S. R., Miller, A. A., Nugent, P. E., and Starr, D. L.
Unveiling the Origin of GRB 090709A: Lack of Periodicity in a Reddened Cosmological Long-Duration Gamma-Ray Burst
2010, *AJ*, **140**, 224-234.
215. Cenko, S. B., Frail, D. A., Harrison, F. A., Haislip, J. B., Reichart, D. E., Butler, N. R., Cobb, B. E., Cucchiara, A., Berger, E., Bloom, J. S., Chandra, P., Fox, D. B., Perley, D. A., Prochaska, J. X., Filippenko, A. V., Glazebrook, K., Ivarsen, K. M., Kasliwal, M. M., Kulkarni, S. R., LaCluyze, A. P., Lopez, S., Morgan, A. N., Pettini, M., & Rana, V. R.
Afterglow Observations of Fermi-LAT Gamma-Ray Bursts and the Emerging Class of Hyper-Energetic Events
2011, *ApJ*, in press; arXiv:1004.2900
214. Macquart, J.-P., Kanekar, N., Frail, D. A., and Ransom, S. M.
*A High-frequency Search for Pulsars within the Central Parsec of Sgr A**
2010, *ApJ*, **715**, 939-946.
213. Chandra, P., Frail, D. A., Fox, D., Kulkarni, S., Berger, E., Cenko, S. B., Bock, D. C.-J., Harrison, F. and Kasliwal, M.
Discovery of Radio Afterglow from the Most Distant Cosmic Explosion
2010, *ApJ*, **712**, L31-L35.
212. Cenko, S. B., Frail, D. A., Harrison, F. A., Kulkarni, S. R., Nakar, E., Chandra, P., Butler, N. R., Fox, D. B., Gal-Yam, A., Kasliwal, M. M., Kelemen, J., Moon, D. -, Price, P. A., Rau, A., Soderberg, A. M., Teplitz, H. I., Werner, M. W., Bock, D. C. -, Bloom, J. S., Starr, D. A., Filippenko, A. V., Chevalier, R. A., Gehrels, N., Nousek, J. N., and Piran, T.
The Collimation and Energetics of the Brightest Swift Gamma-Ray Bursts
2010, *ApJ*, **711**, 641-654.
211. Ofek, E. O., Breslauer, B., Gal-Yam, A., Frail, D., Kasliwal, M. M., Kulkarni, S. R., & Waxman, E.
Long-duration Radio Transients Lacking Optical Counterparts are Possibly Galactic Neutron Stars
2010, *ApJ*, **711**, 517-531.
210. Cenko, S. B., Kelemen, J., Harrison, F. A., Fox, D. B., Kulkarni, S. R., Kasliwal, M. M., Ofek, E. O., Rau, A., Gal-Yam, A., Frail, D. A., and Moon, D.-S.
Dark Bursts in the Swift Era: The Palomar 60 Inch-Swift Early Optical Afterglow Catalog
2009, *ApJ*, **693**, 1484-1493.

Publications

- (cont'd): 209. Perley, D. A., Li, W., Chornock, R., Prochaska, J. X., Butler, N. R., Chandra, P., Pollack, L. K., Bloom, J. S., Filippenko, A. V., Swan, H., Yuan, F., Akerlof, C., Auger, M. W., Cenko, S. B., Chen, H.-W., Fassnacht, C. D., Fox, D., Frail, D., Johansson, E. M., McKay, T., Le Mignant, D., Modjaz, M., Rujopakarn, W., Russel, R., Skinner, M. A., Smith, G. H., Smith, I., van Dam, M. A., and Yost, S.
GRB 071003: Broadband Follow-up Observations of a Very Bright Gamma-Ray Burst in a Galactic Halo
2008, ApJ, **688**, 470-490.
208. Gal-Yam, A., Nakar, E., Ofek, E. O., Cenko, S. B., Kulkarni, S. R., Soderberg, A. M., Harrison, F., Fox, D. B., Price, P. A., Penprase, B. E., Frail, D. A., Atteia, J. L., Berger, E., Gladders, M., and Mulchaey, J.
New Imaging and Spectroscopy of the Locations of Several Short-Hard Gamma-Ray Bursts
2008, ApJ, **686**, 408-416.
207. Chandra, P., Cenko, S. B., Frail, D. A., Chevalier, R. A., Macquart, J.-P., Kulkarni, S. R., Bock, D. C.-J., Bertoldi, F., Kasliwal, M., Fox, D. B., Price, P. A., Berger, E., Soderberg, A. M., Harrison, F. A., Gal-Yam, A., Ofek, E. O., Rau, A., Schmidt, B. P., Cameron, P. B., Cowie, L. L., Cowie, A., Roth, K. C., Dopita, M., Peterson, B., and Penprase, B. E.
A Comprehensive Study of GRB 070125, A Most Energetic Gamma-Ray Burst
2008, ApJ, **683**, 924-942.
206. Kasliwal, M. M., Cenko, S. B., Kulkarni, S. R., Cameron, P. B., Nakar, E., Ofek, E. O., Rau, A., Soderberg, A. M., Campana, S., Bloom, J. S., Perley, D. A., Pollack, L. K., Barthelmy, S., Cummings, J., Gehrels, N., Krimm, H. A., Markwardt, C. B., Sato, G., Chandra, P., Frail, D., Fox, D. B., Price, P. A., Berger, E., Grebenev, S. A., Krivonos, R. A., and Sunyaev, R. A.
GRB 070610: A Curious Galactic Transient
2008, ApJ, **678**, 1127-1135.
205. Cenko, S. B., Fox, D. B., Penprase, B. E., Cucchiara, A., Price, P. A., Berger, E., Kulkarni, S. R., Harrison, F. A., Gal-Yam, A., Ofek, E. O., Rau, A., Chandra, P., Frail, D. A., Kasliwal, M. M., Schmidt, B. P., Soderberg, A. M., Cameron, P. B., and Roth, K. C.
GRB 070125: The First Long-Duration Gamma-Ray Burst in a Halo Environment
2008, ApJ, **677**, 441-447.
204. Berger, E., Fox, D. B., Price, P. A., Nakar, E., Gal-Yam, A., Holz, D. E., Schmidt, B. P., Cucchiara, A., Cenko, S. B., Kulkarni, S. R., Soderberg, A. M., Frail, D. A., Penprase, B. E., Rau, A., Ofek, E., Burnell, S. J. B., Cameron, P. B., Cowie, L. L., Dopita, M. A., Hook, I., Peterson, B. A., Podsiadlowski, P., Roth, K. C., Rutledge, R. E., Sheppard, S. S., & Songaila, A.
A New Population of High-Redshift Short-Duration Gamma-Ray Bursts
2007, ApJ, **664**, 1000-1010.
203. Ofek, E. O., Cenko, S. B., Gal-Yam, A., Fox, D. B., Nakar, E., Rau, A., Frail, D. A., Kulkarni, S. R., Price, P. A., Schmidt, B. P., Soderberg, A. M., Peterson, B., Berger, E., Sharon, K., Shemmer, O., Penprase, B. E., Chevalier, R. A., Brown, P. J., Burrows, D. N., Gehrels, N., Harrison, F., Holland, S. T., Mangano, V., McCarthy, P. J., Moon, D.-S., Nousek, J. A., Persson, S. E., Piran, T., & Sari, R.
GRB 060505: A Possible Short-Duration Gamma-Ray Burst in a Star-forming Region at a Redshift of 0.09
2007, **662**, 1129-1135.

Publications

- (cont'd): 202. Soderberg, A. M., Nakar, E., Cenko, S. B., Cameron, P. B., Frail, D. A., Kulkarni, S. R., Fox, D. B., Berger, E., Gal-Yam, A., Moon, D.-S., Price, P. Anderson, G., Schmidt, B. P., Salvo, M., Rich, J., Rau, A., Ofek, E. O., Chevalier, R. A., Hamuy, M., Harrison, F. A., Kumar, P., MacFadyen, A., McCarthy, P. J., Park, H. S., Peterson, B. A., Phillips, M. M., Rauch, M., Roth, M., & Sheckman, S.
A Spectacular Radio Flare from XRF 050416a at 40 Days, Implications for the Nature of X-Ray Flashes
2007, ApJ, **661**, 982-994.
201. Berger, E., Fox, D. B., Kulkarni, S. R., Frail, D. A., & Djorgovski, S. G.
The ERO Host Galaxy of GRB 020127: Implications for the Metallicity of GRB Progenitors
2007, **660**, 504-508.
200. Ofek, E. O., Cameron, P. B., Kasliwal, M. M., Gal-Yam, A., Rau, A., Kulkarni, S. R., Frail, D. A., Chandra, P., Cenko, S. B., Soderberg, A. M., & Immler, S.
SN 2006gy: An Extremely Luminous Supernova in the Galaxy NGC 1260
2007, **659**, L13-L16.
199. Ofek, E. O., Kulkarni, S. R., Nakar, E., Cenko, S. B., Cameron, P. B., Frail, D. A., Gal-Yam, A., Soderberg, A. M., & Fox, D. B.
The Short-Hard GRB 051103: Observations, Implications for Its Nature
2006, ApJ, **652**, 507-511.
198. Gal-Yam, A., Fox, D. B., Price, P. A., Ofek, E. O., Davis, M. R., Leonard, D. C., Soderberg, A. M., Schmidt, B. P., Lewis, K. M., Peterson, B. A., Kulkarni, S. R., Berger, E., Cenko, S. B., Sari, R., Sharon, K., Frail, D., Moon, D.-S., Brown, P. J., Cucchiara, A., Harrison, F., Piran, T., Persson, S. E., McCarthy, P. J., Penprase, B. E., Chevalier, R. A., & MacFadyen, A. I.
A novel explosive process is required for the γ -ray burst GRB 060614
2006, Nature, **444**, 1053-1055.
197. Cenko, S. B., Kasliwal, M., Harrison, F. A., Pal'shin, V., Frail, D. A., Fox, D. B., Gal-Yam, A., Kulkarni, S. R., Moon, D.-S., Nakar, E., Ofek, E. O., Penprase, B. E., Price, P. A., Sari, R., Schmidt, B. P., Soderberg, A. M., Aptekar, R., Frederiks, D., Golenetskii, S., Burrows, D. N., Chevalier, R. A., Gehrels, N., McCarthy, P. J., Nousek, J. A., & Piran, T.
Multiwavelength Observations of GRB 050820A: An Exceptionally Energetic Event Followed from Start to Finish
2006, ApJ, **652**, 490-506.
196. Soderberg, A. M., Chevalier, R. A., Kulkarni, S. R., & Frail, D. A.
The Radio and X-Ray Luminous SN 2003bg and the Circumstellar Density Variations around Radio Supernovae
2006, ApJ, **651**, 1005-1018.
195. A. Gal-Yam, E. Nakar, E. Ofek, D. B. Fox, S. B. Cenko, S. R. Kulkarni, A. M. Soderberg, F. Harrison, P. A. Price, B. E. Penprase, D. A. Frail, E. Berger, M. Gladders, & J. Mulchaey
The Progenitors of Short-Hard Gamma-Ray Bursts from an Extended Sample of Events
2006, ApJ, in press; astro-ph/0509891

Publications

- (cont'd):
194. Soderberg, A. M., Berger, E., Kasliwal, M., Frail, D. A., Price, P. A., Schmidt, B. P., Kulkarni, S. R., Fox, D. B., Cenko, S. B., Gal-Yam, A., Nakar, E., & Roth, K. C.
The Afterglow, Energetics, and Host Galaxy of the Short-Hard Gamma-Ray Burst 051221a
2006, ApJ, **650**, 261-271.
 193. Soderberg, A. M., Kulkarni, S. R., Nakar, E., Berger, E., Cameron, P. B., Fox, D. B., Frail, D., Gal-Yam, A., Sari, R., Cenko, S. B., Kasliwal, M., Chevalier, R. A., Piran, T., Price, P. A., Schmidt, B. P., Pooley, G., Moon, D.-S., Penprase, B. E., Ofek, E., Rau, A., Gehrels, N., Nousek, J. A., Burrows, D. N., Persson, S. E., & McCarthy, P. J.
Relativistic ejecta from X-ray flash XRF 060218 and the rate of cosmic explosions
2006, Nature, **442**, 1014-1017.
 192. Frail, D. A., Cameron, P. B., Kasliwal, M., Nakar, E., Price, P. A., Berger, E., Gal-Yam, A., Kulkarni, S. R., Fox, D. B., Soderberg, A. M., Schmidt, B. P., Ofek, E., & Cenko, S. B.
An Energetic Afterglow from a Distant Stellar Explosion
2006, ApJ, **636**, L99-L102.
 191. Gal-Yam, A., Ofek, E. O., Poznanski, D., Levinson, A., Waxman, E., Frail, D. A., Soderberg, A. M., Nakar, E., Li, W., & Filippenko, A. V.
Radio and Optical Follow-up Observations of a Uniform Radio Transient Search: Implications for Gamma-Ray Bursts and Supernovae
2006, ApJ, **639**, 331-339.
 190. Soderberg, A. M., Kulkarni, S. R., Price, P. A., Fox, D. B., Berger, E., Moon, D.-S., Cenko, S. B., Gal-Yam, A., Frail, D. A., Chevalier, R. A., Cowie, L., Da Costa, G. S., MacFadyen, A., McCarthy, P. J., Noel, N., Park, H. S., Peterson, B. A., Phillips, M. M., Rauch, M., Rest, A., Rich, J. Roth, K. Roth, M. Schmidt, B. P. Smith, R. C. & Wood, P. R.
An HST Study of the Supernovae Accompanying GRB 040924 GRB 041006
2006, ApJ, **636**, 391-399.
 189. Berger, E., Price, P. A., Cenko, S. B., Gal-Yam, A., Soderberg, A. M., Kasliwal, M., Leonard, D. C., Cameron, P. B., Frail, D. A., Kulkarni, S. R., Murphy, D. C., Krzeminski, W., Piran, T., Lee, B. L., Roth, K. C., Moon, D.-S., Fox, D. B., Harrison, F. A., Persson, S. E., Schmidt, B. P., Penprase, B. E., Rich, J., Peterson, B. A., & Cowie, L. L.
The afterglow and elliptical host galaxy of the short γ -ray burst GRB 050724
2005, Nature, **438**, 988-990.
 188. Berger, E., Kulkarni, S. R., Fox, D. B., Soderberg, A. M., Harrison, F. A., Nakar, E., Kelson, D. D., Gladders, M. D., Mulchaey, J. S., Oemler, A., Dressler, A., Cenko, S. B., Price, P. A., Schmidt, B. P., Frail, D. A., Morrell, N., Gonzalez, S., Krzeminski, W., Sari, R., Gal-Yam, A., Moon, D.-S., Penprase, B. E., Jayawardhana, R., Scholz, A., Rich, J., Peterson, B. A., Anderson, G., McNaught, R., Minezaki, T., Yoshii, Y., Cowie, L. L., & Pimblet, K.
Afterglows, Redshifts, and Properties of Swift Gamma-Ray Bursts
2005, ApJ, **634**, 501-508.
 187. Frail, D. A.
The Radio Afterglows of Gamma-Ray Bursts
2005, Invited Review in "Cosmic Explosions, On the 10th Anniversary of SN1993J." Proceedings of IAU Colloquium 192. Edited by J.M. Marcaide and Kurt W. Weiler. (Berlin: Springer), pp. 451-458.

Publications

- (cont'd): 186. Fox, D. B., Frail, D. A., Price, P. A., Kulkarni, S. R., Berger, E., Piran, T., Soderberg, A. M., Cenko, S. B., Cameron, P. B., Gal-Yam, A., Kasliwal, M. M., Moon, D.-S., Harrison, F. A., Nakar, E., Schmidt, B. P., Penprase, B., Chevalier, R. A., Kumar, P., Roth, K., Watson, D., Lee, B. L., Shtetman, S., Phillips, M. M., Roth, M., McCarthy, P. J., Rauch, M., Cowie, L., Peterson, B. A., Rich, J., Kawai, N., Aoki, K., Kosugi, G., Totani, T., Park, H.-S., MacFadyen, A., & Hurley, K. C.
The afterglow of GRB 050709 and the nature of the short-hard γ -ray bursts
2005, *Nature*, **437**, 845-850.
185. Smith, I. A., Tilanus, R. P. J., Tanvir, N., Barnard, V. E., Moriarty-Schieven, G. H., Frail, D. A., Wijers, R. A. M. J., Vreeswijk, P., Rol, E., & Kouveliotou, C.
SCUBA sub-millimeter observations of gamma-ray bursts. IV. GRB 021004, 021211, 030115, 030226, 041006
2005, *A&A*, **439**, 987-996.
184. Berger, E., Fox, D. B., Kulkarni, S. R., Krzeminski, W., Soderberg, A. M., Frail, D. A., Burrows, D. N., Cenko, S. B., Murphy, E. J., Price, P. A., Gal-Yam, A., Moon, D.-S., Gehrels, N., Freedman, W. L., Persson, S. E., Barthelmy, S., Hill, J. E., Nousek, J. A., & Moretti, A.
The Discovery of the Optical and Near-IR Afterglows of the First Swift Gamma-Ray Bursts
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