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High-contrast imaging of protoplanetary disks

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Citation

Boer, J. de. (2018, January 10). *High-contrast imaging of protoplanetary disks*. Retrieved from <https://hdl.handle.net/1887/57806>

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Title: High-contrast imaging of protoplanetary disks

Date: 2018-01-10

Bibliography

- Adams, F. C., Lada, C. J., & Shu, F. H. 1987, *apj*, 312, 788 5
- Adams, F. C., Lada, C. J., & Shu, F. H. 1988, *apj*, 326, 865 5
- Alexander, R., Pascucci, I., Andrews, S., Armitage, P., & Cieza, L. 2014, *Protostars and Planets VI*, 475 44
- Alexander, R. D. & Armitage, P. J. 2009, *ApJ*, 704, 989 57
- Alexander, R. D., Clarke, C. J., & Pringle, J. E. 2006, *MNRAS*, 369, 216 8
- Allard, F., Homeier, D., & Freytag, B. 2012, *Philosophical Transactions of the Royal Society of London Series A*, 370, 2765 85
- ALMA Partnership, Brogan, C. L., Pérez, L. M., et al. 2015, *apjl*, 808, L3 11, 12, 56
- Amara, A. & Quanz, S. P. 2012, *MNRAS*, 427, 948 18
- Andre, P., Ward-Thompson, D., & Barsony, M. 1993, *apj*, 406, 122 5
- Andrews, S. M., Wilner, D. J., Espaillat, C., et al. 2011, *ApJ*, 732, 42 24, 31, 57, 58, 66, 67, 69, 74, 84, 85
- Andrews, S. M., Wilner, D. J., Zhu, Z., et al. 2016, *apjl*, 820, L40 13, 57
- Avenhaus, H., Quanz, S. P., Meyer, M. R., et al. 2014, *ApJ*, 790, 56 44
- Avenhaus, H., Quanz, S. P., Schmid, H. M., et al. 2014, *The Astrophysical Journal*, 781, 87 64, 88, 98, 118, 119
- Baraffe, I., Chabrier, G., Barman, T. S., Allard, F., & Hauschildt, P. H. 2003, *A&A*, 402, 701 79
- Barnard, E. E. 1908, *Astronomische Nachrichten*, 177, 231 3
- Benisty, M., Juhasz, A., Boccaletti, A., et al. 2015, *A&A*, 578, L6 44, 57, 111
- Bergin, E. A. & Tafalla, M. 2007, *Annu. Rev. Astron. Astrophys.*, 45, 339 4
- Beuzit, J.-L., Feldt, M., Dohlen, K., et al. 2006, *The messenger*, 125, 29 26, 46, 88
- Beuzit, J.-L., Feldt, M., Dohlen, K., et al. 2008, in *Proc. SPIE, Vol. 7014, Ground-based and Airborne Instrumentation for Astronomy II*, 701418 17, 31, 58, 111

- Bianchi, L., Herald, J., Efremova, B., et al. 2011, *Astrophys. Space Sci.*, 335, 161 85
- Biller, B. A., Liu, M. C., Rice, K., et al. 2015, *MNRAS*, 450, 4446 75
- Birnstiel, T., Andrews, S. M., Pinilla, P., & Kama, M. 2015, *apjl*, 813, L14 10
- Blum, J. & Wurm, G. 2008, *Annu. Rev. Astron. Astrophys.*, 46, 21 7, 13
- Boccaletti, A., Abe, L., Baudrand, J., et al. 2008, in *Proc. SPIE*, Vol. 7015, *Adaptive Optics Systems*, 70151B 58, 113
- Bok, B. J. & Reilly, E. F. 1947, *apj*, 105, 255 4
- Boss, A. P. 1997, *Science*, 276, 1836 7
- Bouvier, A. & Wadhwa, M. 2010, *Nature Geoscience*, 3, 637 1
- Bouvier, J., Lanzafame, A. C., Venuti, L., et al. 2016, *A&A*, 590, A78 86
- Brauer, F., Dullemond, C. P., & Henning, T. 2008, *A&A*, 480, 859 6
- Burrows, C. J., Stapelfeldt, K. R., Watson, A. M., et al. 1996, *ApJ*, 473, 437 35
- Calvet, N., D'Alessio, P., Hartmann, L., et al. 2002, *apj*, 568, 1008 8
- Calvet, N., Hartmann, L., Kenyon, S. J., & Whitney, B. A. 1994, *apj*, 434, 330 5
- Calvet, N., Patino, A., Magris, G. C., & D'Alessio, P. 1991, *apj*, 380, 617 10
- Canovas, H., Ménard, F., de Boer, J., et al. 2015, *A&A*, 582, L7 47, 120
- Canovas, H., Ménard, F., Hales, A., et al. 2013, *Astronomy & Astrophysics*, 556, 123 88
- Canovas, H., Rodenhuis, M., Jeffers, S. V., Min, M., & Keller, C. U. 2011, *Astronomy & Astrophysics*, 531, A102 23, 33, 47, 61, 89, 92, 116
- Casassus, S., van der Plas, G., M, S. P., et al. 2013, *Nature*, 493, 191 11
- Chiang, E. & Murray-Clay, R. 2007, *Nature Physics*, 3, 604 7
- Cieza, L., Padgett, D. L., Stapelfeldt, K. R., et al. 2007, *ApJ*, 667, 308 8
- Claudi, R. U., Turatto, M., Gratton, R. G., et al. 2008, in *Proc. SPIE*, Vol. 7014, *Ground-based and Airborne Instrumentation for Astronomy II*, 70143E 20, 58, 111, 114
- Close, L. M., Follette, K. B., Males, J. R., et al. 2014, *ApJ*, 781, L30 20
- Close, L. M., Males, J. R., Kopon, D. A., et al. 2012, in *Proc. SPIE*, Vol. 8447, *Adaptive Optics Systems III*, 84470X 17
- Cutri, R. M. & et al. 2013, *VizieR Online Data Catalog*, 2328 85
- Cutri, R. M., Skrutskie, M. F., van Dyk, S., et al. 2003, *2MASS All Sky Catalog of point sources*. 46, 85
- Dahm, S. E. & Carpenter, J. M. 2009, *AJ*, 137, 4024 51
- D'Alessio, P., Calvet, N., Hartmann, L., Lizano, S., & Cantó, J. 1999, *apj*, 527, 893 6

- D'Alessio, P., Cantö, J., Calvet, N., & Lizano, S. 1998, *ApJ*, 500, 411–48
- de Boer, J., Girard, J. H., Canovas, H., et al. 2017, *MNRAS*, 466, L7–47, 60
- de Boer, J., Girard, J. H., Mawet, D., et al. 2014, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 9147, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 87–33, 122
- de Gregorio-Monsalvo, I., Ménard, F., Dent, W., et al. 2013, *A&A*, 557, A133–82
- de Juan Ovelar, M., Min, M., Dominik, C., et al. 2013, *A&A*, 560, A111–44, 49, 50
- de Juan Ovelar, M., Pinilla, P., Min, M., Dominik, C., & Birnstiel, T. 2016, *MNRAS*, 459, L85–75
- de Kok, R. J., Stam, D. M., & Karalidi, T. 2011, *ApJ*, 741, 59–110
- de Zeeuw, P. T., Hoogerwerf, R., de Bruijne, J. H. J., Brown, A. G. A., & Blaauw, A. 1999, *AJ*, 117, 354–44
- Devillard, N. 2001, in *Astronomical Society of the Pacific Conference Series*, Vol. 238, *Astronomical Data Analysis Software and Systems X*, ed. F. R. Harnden, Jr., F. A. Primini, & H. E. Payne, 525–65
- Dodson-Robinson, S. E. & Salyk, C. 2011, *ApJ*, 738, 131–79
- Dohlen, K., Langlois, M., Saisse, M., et al. 2008, in *Proc. SPIE*, Vol. 7014, *Ground-based and Airborne Instrumentation for Astronomy II*, 70143L–58, 111, 114
- Dong, R., Fung, J., & Chiang, E. 2016, *ArXiv e-prints* 74
- Dong, R., Rafikov, R., Zhu, Z., et al. 2012, *ApJ*, 750, 161–24, 31
- Dubrulle, B., Morfill, G., & Sterzik, M. 1995, *Icarus*, 114, 237–37
- Dullemond, C. P., Dominik, C., & Natta, A. 2001, *apj*, 560, 957–10
- Espaillet, C., Calvet, N., D'Alessio, P., et al. 2007, *apjl*, 670, L135–8
- Espaillet, C., Furlan, E., D'Alessio, P., et al. 2011, *ApJ*, 728, 49–31
- Espaillet, C., Muzerolle, J., Najita, J., et al. 2014, *Protostars and Planets VI*, 497–44
- Esposito, S. & Riccardi, A. 2001, *A&A*, 369, L9–27
- Flaherty, K. M., Muzerolle, J., Rieke, G., et al. 2013, *AJ*, 145, 66–51
- Flock, M., Ruge, J. P., Dzyurkevich, N., et al. 2015, *A&A*, 574, A68–44
- Fusco, T., Sauvage, J. F., Petit, C., et al. 2014, in *SPIE Astronomical Telescopes + Instrumentation*, ed. E. Marchetti, L. M. Close, & J.-P. Véran (SPIE), 91481U–17, 31, 36, 46, 58, 111
- Galli, P. A. B., Bertout, C., Teixeira, R., & Ducourant, C. 2013, *A&A*, 558, A77–86
- Gammie, C. F. 1996, *apj*, 457, 355–7
- Garufi, A., Quanz, S. P., Avenhaus, H., et al. 2013, *Astronomy & Astrophysics*, 560, A105–44, 88, 98

- Garufi, A., Quanz, S. P., Schmid, H. M., et al. 2016, *A&A*, 588, A8 110
- Ginski, C., Schmidt, T. O. B., Mugrauer, M., et al. 2014, *MNRAS*, 444, 2280 65
- Ginski, C., Stolker, T., Pinilla, P., et al. 2016, *ArXiv e-prints* 47, 75
- Girard, J. H. V., Kasper, M., Quanz, S. P., et al. 2010, in *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, Vol. 7736, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series* 59, 88
- Grady, C. A., Muto, T., Hashimoto, J., et al. 2013, *ApJ*, 762, 48 57
- Grady, C. A., Polomski, E. F., Henning, T., et al. 2001, *AJ*, 122, 3396 56
- Hansen, J. E. & Travis, L. D. 1974, *Space Sci. Rev.*, 16, 527 20, 24
- Harrington, D. M., Kuhn, J. R., & Hall, S. 2011, *Publications of the Astronomical Society of the Pacific*, 123, 799 89, 96
- Hayano, Y., Takami, H., Oya, S., et al. 2010, in *Proc. SPIE*, Vol. 7736, *Adaptive Optics Systems II*, 77360N 17
- Helou, G. & Walker, D. W., eds. 1988, *Infrared astronomical satellite (IRAS) catalogs and atlases. Volume 7: The small scale structure catalog*, Vol. 7, 1–265 85
- Herbig, G. H. 1960, *apjs*, 4, 337 9
- Hester, J. J., Desch, S. J., Healy, K. R., & Leshin, L. A. 2004, *Science*, 304 5
- Høg, E., Fabricius, C., Makarov, V. V., et al. 2000, *A&A*, 355, L27 31
- Hollenbach, D. & Gorti, U. 2005, in *Protostars and Planets V Posters*, Vol. 1286, 8433 57
- Hollenbach, D. J., Yorke, H. W., & Johnstone, D. 2000, *Protostars and Planets IV*, 401 7
- Horne, J. H. & Baliunas, S. L. 1986, *ApJ*, 302, 757 83
- Hugot, E., Ferrari, M., El Hadi, K., et al. 2012, *A&A*, 538, A139 58, 113
- Ishihara, D., Onaka, T., Kataza, H., et al. 2010, *A&A*, 514, A1 85
- Jeffers, S. V., Min, M., Waters, L. B. F. M., et al. 2014, *A&A*, 572, A3 30, 36
- Kant, I. 1755, *Allgemeine Naturgeschichte und Theorie des Himmels* 1
- Kastner, J. H., Montez, Jr., R., Rodriguez, D., et al. 2010, *ApJ*, 719, L65 31
- Kataoka, A., Tsukagoshi, T., Momose, M., et al. 2016, *ApJ*, 831, L12 26
- Keller, C. U. & von der Luehe, O. 1992, *A&A*, 261, 321 20
- Kenyon, S. J. & Hartmann, L. 1987, *ApJ*, 323, 714 9
- Kervella, P., Montargès, M., Lagadec, E., et al. 2015, *A&A*, 578, A77 30, 36
- Kraus, A. L., Ireland, M. J., Martinache, F., & Lloyd, J. P. 2008, *ApJ*, 679, 762 50, 65

- Krautter, J., Wichmann, R., Schmitt, J. H. M. M., et al. 1997, *A&A Suppl.*, 123 57, 84
- Krist, J. E., Stapelfeldt, K. R., Ménard, F., Padgett, D. L., & Burrows, C. J. 2000, *ApJ*, 538, 793 110
- Kuhn, J. R., Potter, D., & Parise, B. 2001, *ApJ*, 553, L189 60
- Kurucz, R. L. 1979, *ApJS*, 40, 1 36
- Lada, C. J. 1987, in *IAU Symposium*, Vol. 115, *Star Forming Regions*, ed. M. Peimbert & J. Jugaku, 1–17 5
- Lafrenière, D., Marois, C., Doyon, R., Nadeau, D., & Artigau, É. 2007, *ApJ*, 660, 770 18
- Lagage, P.-O., Doucet, C., Pantin, E., et al. 2006, *Science*, 314, 621 70
- Langlois, M., Dohlen, K., Vigan, A., et al. 2014, in *Proc. SPIE*, Vol. 9147, *Ground-based and Airborne Instrumentation for Astronomy V*, 91471R 59
- Lazarian, A., Goodman, A. A., & Myers, P. C. 1997, *apj*, 490, 273 4
- Lenzen, R., Hartung, M., Brandner, W., et al. 2003, in *Astronomical Telescopes and Instrumentation*, ed. M. Iye & A. F. M. Moorwood (SPIE), 944–952 17, 59, 88
- Lovelace, R. V. E. & Romanova, M. M. 2014, *Fluid Dynamics Research*, 46, 041401 11
- Lucy, L. B. 1974, *AJ*, 79, 745 34
- Luhman, K. L. & Mamajek, E. E. 2012, *ApJ*, 758, 31 51
- Maaskant, K. M., Honda, M., Waters, L. B. F. M., et al. 2013, *A&A*, 555, A64 10, 27
- Macintosh, B., Graham, J. R., Ingraham, P., et al. 2014, *Proceedings of the National Academy of Science*, 111, 12661 17
- Maire, A.-L., Bonnefoy, M., Ginski, C., et al. 2016, *A&A*, 587, A56 64, 72
- Makarov, V. V. 2007, *ApJ*, 658, 480 59, 84, 85, 86
- Manara, C. F., Testi, L., Natta, A., et al. 2014, *A&A*, 568, A18 74, 84
- Marino, S., Perez, S., & Casassus, S. 2015, *ApJ*, 798, L44 50
- Marois, C., Correia, C., Galicher, R., et al. 2014, in *Proc. SPIE*, Vol. 9148, *Adaptive Optics Systems IV*, 91480U 18, 65
- Marois, C., Lafrenière, D., Doyon, R., Macintosh, B., & Nadeau, D. 2006, *ApJ*, 641, 556 18, 65, 110
- Marois, C., Zuckerman, B., Konopacky, Q. M., Macintosh, B., & Barman, T. 2010, *Nat*, 468, 1080 19
- Martinez, P., Dorrer, C., Aller-Carpentier, E., et al. 2009, *The Messenger*, 137, 18 58, 113

- Mathews, G. S., Williams, J. P., & Ménard, F. 2012, *ApJ*, 753, 59 45, 47
- Mayama, S., Hashimoto, J., Muto, T., et al. 2012, *apjl*, 760, L26 11, 45, 48, 49, 57, 110
- Mazoyer, J., Boccaletti, A., Choquet, É., et al. 2016, *ApJ*, 818, 150 75
- Meeus, G., Waters, L. B. F. M., Bouwman, J., et al. 2001, *A&A*, 365, 476 9, 10
- Melis, C., Gielen, C., Chen, C. H., et al. 2010, *ApJ*, 724, 470 31
- Merín, B., Brown, J. M., Oliveira, I., et al. 2010, *ApJ*, 718, 1200 84
- Messina, S., Desidera, S., Turatto, M., Lanzafame, A. C., & Guinan, E. F. 2010, *A&A*, 520, A15 85
- Milli, J., Mawet, D., Pinte, C., et al. 2015, *A&A*, 577, A57 24
- Milli, J., Mouillet, D., Lagrange, A.-M., et al. 2012, *A&A*, 545, A111 67
- Min, M., Canovas, H., Mulders, G. D., & Keller, C. U. 2012, *Astronomy & Astrophysics*, 537, A75 39, 74
- Min, M., Dullemond, C. P., Dominik, C., de Koter, A., & Hovenier, J. W. 2009, *arXiv.org*, 155 36
- Montesinos, M., Perez, S., Casassus, S., et al. 2016, *apjl*, 823, L8 11
- Norris, B. R. M., Tuthill, P. G., Ireland, M. J., et al. 2013, *Nature*, 484, 220 88
- Ochsenbein, F., Bauer, P., & Marcout, J. 2000, *A&A Suppl.*, 143, 23 85
- Otten, G. P. P. L., Snik, F., Kenworthy, M. A., et al. 2017, *ApJ*, 834, 175 27
- Pavlov, A., Möller-Nilsson, O., Feldt, M., et al. 2008, in *Proc. SPIE*, Vol. 7019, *Advanced Software and Control for Astronomy II*, 701939 64
- Pecaut, M. J. & Mamajek, E. E. 2013, *ApJS*, 208, 9 84, 85
- Pecaut, M. J., Mamajek, E. E., & Bubar, E. J. 2012, *ApJ*, 746, 154 44
- Perrin, M. D., Duchene, G., Millar-Blanchaer, M., et al. 2015, *ApJ*, 799, 182 26
- Perrin, M. D., Schneider, G., Duchene, G., et al. 2009, *ApJ*, 707, L132 110
- Perrot, C., Boccaletti, A., Pantin, E., et al. 2016, *A&A*, 590, L7 75
- Pinilla, P., Benisty, M., & Birnstiel, T. 2012, *A&A*, 545, A81 44, 49, 79
- Pinilla, P., de Boer, J., Benisty, M., et al. 2015a, *A&A*, 584, L4 57
- Pinilla, P., de Juan Ovelar, M., Ataiee, S., et al. 2015b, *A&A*, 573, A9 44
- Pinilla, P., Flock, M., de Juan Ovelar, M., & Birnstiel, T. 2016, *ArXiv e-prints* 75
- Pinte, C., Dent, W. R. F., Ménard, F., et al. 2016, *ApJ*, 816, 25 12
- Pojmanski, G. 1997, *Acta Astronomica*, 47, 467 84
- Pollack, J. B., Hubickyj, O., Bodenheimer, P., et al. 1996, *Icarus*, 124, 62 7
- Povel, H. P., Keller, C. U., & Yadigaroglu, I. A. 1994, *Applied Optics*, 33, 4254 32

- Preibisch, T. & Zinnecker, H. 1999, *AJ*, 117, 2381 44
- Quanz, S. P., Avenhaus, H., Buenzli, E., et al. 2013, *The Astrophysical Journal Letters*, 766, L2 44, 88, 110
- Rakic, A. D., Djurisic, A. B., Elazar, J. M., & Majewski, M. L. 1998, *Appl. Opt.*, 37, 5271 129
- Rapson, V. A., Kastner, J. H., Millar-Blanchaer, M. A., & Dong, R. 2015, *ApJ*, 815, L26 75, 110
- Rice, W. K. M., Armitage, P. J., Wood, K., & Lodato, G. 2006, *MNRAS*, 373, 1619 44
- Rieke, G. H., Wright, G. S., Böker, T., et al. 2015, *PASP*, 127, 584 27
- Roberts, D. H., Lehar, J., & Dreher, J. W. 1987, *AJ*, 93, 968 83
- Roddiar, F. 2004, *Adaptive Optics in Astronomy*, 419 15
- Rousset, G., Lacombe, F., Puget, P., et al. 2003, in *Astronomical Telescopes and Instrumentation*, ed. P. L. Wizinowich & D. Bonaccini (SPIE), 140–149 17, 59, 88
- Scargle, J. D. 1982, *ApJ*, 263, 835 83
- Schmid, H. M., Downing, M., Roelfsema, R., et al. 2012, in *Ground-based and Airborne Instrumentation for Astronomy IV. Proceedings of the SPIE, ETH Zürich (Switzerland)* 32, 47, 61, 88
- Schmid, H. M., Joos, F., & Tschan, D. 2006, *A&A*, 452, 657 47, 61, 119
- Seager, S., Whitney, B. A., & Sasselov, D. D. 2000, *ApJ*, 540, 504 111
- Semel, M., Donati, J.-F., & Rees, D. E. 1993, *A&A*, 278, 231 23
- Sengupta, S. & Marley, M. S. 2010, *ApJ*, 722, L142 110
- Siess, L., Dufour, E., & Forestini, M. 2000, *A&A*, 358, 593 79
- Sitko, M. L., Day, A. N., Kimes, R. L., et al. 2012, *ApJ*, 745, 29 51
- Skinner, C. J., Meixner, M., & Bobrowsky, M. 1998, *MNRAS*, 300, L29 30
- Smith, B. A. & Terrile, R. J. 1984, *Science*, 226, 1421 15, 16, 20, 33
- Snik, F. & Keller, C. U. 2013, *Astronomical Polarimetry: Polarized Views of Stars and Planets*, ed. T. D. Oswalt & H. E. Bond, 175 121
- Soummer, R., Pueyo, L., & Larkin, J. 2012, *ApJ*, 755, L28 18, 20, 71
- Sparks, W. B. & Ford, H. C. 2002, *ApJ*, 578, 543 20
- Stam, D. M., Hovenier, J. W., & Waters, L. B. F. M. 2004, *A&A*, 428, 663 111
- Stokes, G. G. 1851, *Transactions of the Cambridge Philosophical Society*, 9, 399 21
- Stolker, T., Dominik, C., Avenhaus, H., et al. 2016, *A&A*, 595, A113 26

- Strom, K. M., Strom, S. E., Edwards, S., Cabrit, S., & Skrutskie, M. F. 1989, *Astronomical Journal*, 97, 1451 7, 57
- Takahashi, S. Z. & Inutsuka, S.-i. 2016, *AJ*, 152, 184 12
- Tamura, M., Hodapp, K., Takami, H., et al. 2006, in Proc. SPIE, Vol. 6269, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 62690V 17
- Thalmann, C., Mulders, G. D., Hodapp, K., et al. 2014, *A&A*, 566, A51 44
- Thalmann, C., Schmid, H. M., Boccaletti, A., et al. 2008, in Proc. SPIE, Vol. 7014, Ground-based and Airborne Instrumentation for Astronomy II, 70143F 31, 58, 111
- Thi, W.-F., Pinte, C., Pantin, E., et al. 2014, *A&A*, 561, A50 76
- Tinbergen, J. 1996, *Astronomical Polarimetry* 23, 89, 122
- Treanor, P. F. 1968, *MNRAS*, 138, 325 23
- Tuthill, P. G., Monnier, J. D., Danchi, W. C., Wishnow, E. H., & Haniff, C. A. 2000, *PASP*, 112, 555 65
- van Boekel, R., Henning, T., Menu, J., et al. 2017, *ApJ*, 837, 132 57, 75, 110, 111, 115
- van der Marel, N., van Dishoeck, E. F., Bruderer, S., et al. 2013, *Science*, 340, 1199 11, 44, 57
- van der Marel, N., van Dishoeck, E. F., Bruderer, S., Pérez, L., & Isella, A. 2015, *A&A*, 579, A106 58, 64, 68, 69, 70, 74, 85
- van Dishoeck, E. F. 2004, *ARA&A*, 42, 119 3
- van Harten, G., Snik, F., & Keller, C. U. 2009, *Publications of the Astronomical Society of the Pacific*, 121, 377 90, 100, 102
- Vigan, A., Bonnefoy, M., Ginski, C., et al. 2016, *A&A*, 587, A55 71
- Vigan, A., Langlois, M., Moutou, C., & Dohlen, K. 2008, *A&A*, 489, 1345 80
- Vigan, A., Moutou, C., Langlois, M., et al. 2010, *MNRAS*, 407, 71 20, 59, 111
- Vigan, A., Patience, J., Marois, C., et al. 2012, *A&A*, 544, A9 71
- Wahhaj, Z., Cieza, L., Koerner, D. W., et al. 2010, *ApJ*, 724, 835 57, 79, 84
- Weidenschilling, S. J. 1977, *MNRAS*, 180, 57 6
- Weinberger, A. J., Becklin, E. E., Schneider, G., et al. 1999, *ApJ*, 525, L53 75
- White, R. J. & Basri, G. 2003, *apj*, 582, 1109 5
- Whitney, B. A. & Hartmann, L. 1992, *ApJ*, 395, 529 48
- Wichmann, R., Covino, E., Alcalá, J. M., et al. 1999, *MNRAS*, 307, 909 74, 84, 85, 86
- Williams, J. P. & Cieza, L. A. 2011, *Annu. Rev. Astron. Astrophys.*, 67 8, 30

- Witzel, G., Eckart, A., Buchholz, R. M., et al. 2011, *Astronomy & Astrophysics*, 525, 130 21, 23, 33, 88
- Witzel, G., Eckart, A., Lenzen, R., & Straubmeier, C. 2010, *The messenger*, 142, 5 98
- Wizinowich, P. L., Le Mignant, D., Bouchez, A. H., et al. 2006, *PASP*, 118, 297 17
- Woitke, P., Min, M., Pinte, C., et al. 2016, *A&A*, 586, A103 37
- Wyatt, M. C. 2008, *ARA&A*, 46, 339 9
- Yorke, H. W., Bodenheimer, P., & Laughlin, G. 1993, *apj*, 411, 274 5
- Youdin, A. N. & Goodman, J. 2005, *apj*, 620, 459 13
- Zhang, K., Isella, A., Carpenter, J. M., & Blake, G. A. 2014, *ApJ*, 791, 42 45, 46, 47, 48, 50
- Zhu, Z., Nelson, R. P., Dong, R., Espaillat, C., & Hartmann, L. 2012, *ApJ*, 755, 6 44
- Zuckerman, B., Melis, C., Song, I., et al. 2008, *ApJ*, 683, 1085 30
- Zurlo, A., Vigan, A., Mesa, D., et al. 2014, *A&A*, 572, A85 59

