



Universiteit  
Leiden  
The Netherlands

## Exploring strange new worlds with high-dispersion spectroscopy

Serindag, D.B.

### Citation

Serindag, D. B. (2022, October 6). *Exploring strange new worlds with high-dispersion spectroscopy*. Retrieved from <https://hdl.handle.net/1887/3466049>

Version: Publisher's Version

[Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3466049>

**Note:** To cite this publication please use the final published version (if applicable).

# Bibliography

- Allard, F., Homeier, D., & Freytag, B. 2011, in Astronomical Society of the Pacific Conference Series, Vol. 448, 16th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun, ed. C. Johns-Krull, M. K. Browning, & A. A. West, 91
- Allard, F., Homeier, D., & Freytag, B. 2012, Philosophical Transactions of the Royal Society of London Series A, 370, 2765
- Allard, F., Homeier, D., Freytag, B., Schaffenberger, W., & Rajpurohit, A. S. 2013, Memorie della Societa Astronomica Italiana Supplementi, 24, 128
- ALMA Partnership, Brogan, C. L., Pérez, L. M., et al. 2015, ApJ, 808, L3
- Alonso-Floriano, F. J., Sánchez-López, A., Snellen, I. A. G., et al. 2019, A&A, 621, A74
- Altweegg, K., Balsiger, H., Bar-Nun, A., et al. 2015, Science, 347, 1261952
- Andrews, S. M. 2020, ARA&A, 58, 483
- Andrews, S. M., Wilner, D. J., Zhu, Z., et al. 2016, ApJ, 820, L40
- Arcangeli, J., Désert, J.-M., Line, M. R., et al. 2018, ApJ, 855, L30
- Armitage, P. J., Livio, M., Lubow, S. H., & Pringle, J. E. 2002, MNRAS, 334, 248
- Asplund, M., Grevesse, N., Sauval, A. J., & Scott, P. 2009, ARA&A, 47, 481
- Ayres, T. R., Lyons, J. R., Ludwig, H. G., Caffau, E., & Wedemeyer-Böhm, S. 2013, ApJ, 765, 46

- Bae, J., Zhu, Z., Baruteau, C., et al. 2019, ApJ, 884, L41
- Barman, T. S., Konopacky, Q. M., Macintosh, B., & Marois, C. 2015, ApJ, 804, 61
- Baxter, C., Désert, J.-M., Parmentier, V., et al. 2020, A&A, 639, A36
- Bell, C. P. M., Mamajek, E. E., & Naylor, T. 2015, MNRAS, 454, 593
- Ben-Ami, S., López-Morales, M., Garcia-Mejia, J., Gonzalez Abad, G., & Szentgyorgyi, A. 2018, ApJ, 861, 79
- Bertrang, G. H. M., Avenhaus, H., Casassus, S., et al. 2018, MNRAS, 474, 5105
- Bétrémieux, Y. & Kaltenegger, L. 2014, ApJ, 791, 7
- Biller, B. A., Males, J., Rodigas, T., et al. 2014, ApJ, 792, L22
- Birkby, J. L., de Kok, R. J., Brogi, M., et al. 2013, MNRAS, 436, L35
- Blondel, P. F. C. & Djie, H. R. E. T. A. 2006, A&A, 456, 1045
- Bonnet, H., Abuter, R., Baker, A., et al. 2004, The Messenger, 117, 17
- Bourrier, V., Kitzmann, D., Kuntzer, T., et al. 2020, A&A, 637, A36
- Brogi, M., de Kok, R. J., Albrecht, S., et al. 2016, ApJ, 817, 106
- Brogi, M., Giacobbe, P., Guilluy, G., et al. 2018, A&A, 615, A16
- Brogi, M. & Line, M. R. 2019, AJ, 157, 114
- Caballero, J. A., Guàrdia, J., del Fresno, M. L., et al. 2016, in Observatory Operations: Strategies, Processes, and Systems VI, ed. A. B. Peck, R. L. Seaman, & C. R. Benn, Vol. 9910, International Society for Optics and Photonics (SPIE), 110–127
- Cabot, S. H. C., Madhusudhan, N., Hawker, G. A., & Gandhi, S. 2019, MNRAS, 482, 4422
- Casasayas-Barris, N., Pallé, E., Yan, F., et al. 2019, A&A, 628, A9
- Charbonneau, D., Brown, T. M., Latham, D. W., & Mayor, M. 2000, ApJ, 529, L45

- Charbonneau, D., Brown, T. M., Noyes, R. W., & Gilliland, R. L. 2002, ApJ, 568, 377
- Chauvin, G., Desidera, S., Lagrange, A. M., et al. 2017, A&A, 605, L9
- Chavez, J. & Lambert, D. L. 2009, ApJ, 699, 1906
- Chazelas, B., Lovis, C., Blind, N., et al. 2020, in Adaptive Optics Systems VII, ed. L. Schreiber, D. Schmidt, & E. Vernet, Vol. 11448, International Society for Optics and Photonics (SPIE), 1393–1401
- Chen, G., Pallé, E., Parviainen, H., Murgas, F., & Yan, F. 2021, ApJ, 913, L16
- Clegg, R. E. S., Lambert, D. L., & Bell, R. A. 1979, ApJ, 234, 188
- Collier Cameron, A., Guenther, E., Smalley, B., et al. 2010, MNRAS, 407, 507
- Cont, D., Yan, F., Reiners, A., et al. 2021, A&A, 651, A33
- Crawford, I. A. 2000, MNRAS, 317, 996
- Cugno, G., Patapis, P., Stolker, T., et al. 2021, A&A, 653, A12
- Daylan, T., Günther, M. N., Mikal-Evans, T., et al. 2019, arXiv e-prints, arXiv:1909.03000
- de Kok, R. J., Brogi, M., Snellen, I. A. G., et al. 2013, A&A, 554, A82
- Dekker, H., D'Odorico, S., Kaufer, A., Delabre, B., & Kotzlowski, H. 2000, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 4008, Optical and IR Telescope Instrumentation and Detectors, ed. M. Iye & A. F. Moorwood, 534–545
- Donati, J. F., Gregory, S. G., Alencar, S. H. P., et al. 2012, MNRAS, 425, 2948
- Dunkin, S. K., Barlow, M. J., & Ryan, S. G. 1997a, MNRAS, 286, 604
- Dunkin, S. K., Barlow, M. J., & Ryan, S. G. 1997b, MNRAS, 290, 165
- Ehrenreich, D., Lovis, C., Allart, R., et al. 2020, Nature, 580, 597
- Eisenhauer, F., Abuter, R., Bickert, K., et al. 2003, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 4841, Instrument Design and Performance for Optical/Infrared Ground-based Telescopes, ed. M. Iye & A. F. M. Moorwood, 1548–1561

- Eistrup, C., Walsh, C., & van Dishoeck, E. F. 2018, A&A, 613, A14
- Espinoza, N., Rackham, B. V., Jordán, A., et al. 2019, MNRAS, 482, 2065
- Evans, T. M., Sing, D. K., Goyal, J. M., et al. 2018, AJ, 156, 283
- Evans, T. M., Sing, D. K., Kataria, T., et al. 2017, Nature, 548, 58
- Fedele, D., Carney, M., Hogerheijde, M. R., et al. 2017, A&A, 600, A72
- Foreman-Mackey, D., Hogg, D. W., Lang, D., & Goodman, J. 2013, PASP, 125, 306
- Fortney, J. J., Lodders, K., Marley, M. S., & Freedman, R. S. 2008, ApJ, 678, 1419
- Fressin, F., Torres, G., Charbonneau, D., et al. 2013, ApJ, 766, 81
- Freudling, W., Romaniello, M., Bramich, D. M., et al. 2013, A&A, 559, A96
- Gandhi, S., Brogi, M., Yurchenko, S. N., et al. 2020, MNRAS, 495, 224
- Gandhi, S. & Madhusudhan, N. 2019, MNRAS, 485, 5817
- Genda, H. & Ikoma, M. 2008, Icarus, 194, 42
- Gibson, N. P., Merritt, S., Nugroho, S. K., et al. 2020, MNRAS, 493, 2215
- Gontcharov, G. A. 2006, Astronomical and Astrophysical Transactions, 25, 145
- Goodman, J. & Weare, J. 2010, Communications in Applied Mathematics and Computational Science, 5, 65
- Gratton, R., Ligi, R., Sissa, E., et al. 2019, A&A, 623, A140
- Gustafsson, B., Edwardsson, B., Eriksson, K., et al. 2008, A&A, 486, 951
- Haffert, S. Y., Bohn, A. J., de Boer, J., et al. 2019, Nature Astronomy, 3, 749
- Hartogh, P., Lis, D. C., Bockelée-Morvan, D., et al. 2011, Nature, 478, 218
- Haynes, K., Mandell, A. M., Madhusudhan, N., Deming, D., & Knutson, H. 2015, ApJ, 806, 146
- Herbig, G. H. 1977, ApJ, 214, 747

- Herman, M. K., de Mooij, E. J. W., Jayawardhana, R., & Brogi, M. 2020, AJ, 160, 93
- Hoeijmakers, H. J., Ehrenreich, D., Heng, K., et al. 2018a, Nature, 560, 453
- Hoeijmakers, H. J., Ehrenreich, D., Kitzmann, D., et al. 2019, A&A, 627, A165
- Hoeijmakers, H. J., Schwarz, H., Snellen, I. A. G., et al. 2018b, A&A, 617, A144
- Hubeny, I., Burrows, A., & Sudarsky, D. 2003, ApJ, 594, 1011
- Hughes, G. L., Gibson, B. K., Carigi, L., et al. 2008, MNRAS, 390, 1710
- Jao, W.-C., Henry, T. J., Subasavage, J. P., et al. 2014, AJ, 147, 21
- Jones, A., Noll, S., Kausch, W., Szyszka, C., & Kimeswenger, S. 2013, A&A, 560, A91
- Kaltenegger, L. 2017, ARA&A, 55, 433
- Keppler, M., Benisty, M., Müller, A., et al. 2018, A&A, 617, A44
- Kesseli, A. Y., Snellen, I. A. G., Casasayas-Barris, N., Molliere, P., & Sanchez-Lopez, A. 2021, arXiv e-prints, arXiv:2111.09916
- Konopacky, Q. M., Barman, T. S., Macintosh, B. A., & Marois, C. 2013, Science, 339, 1398
- Kovács, G., Kovács, T., Hartman, J. D., et al. 2013, A&A, 553, A44
- Lacour, S., Wang, J. J., Rodet, L., et al. 2021, A&A, 654, L2
- Laertius, D. & Hicks, R. D. 2015, Lives of Eminent Philosophers (Cambridge, MA: Harvard University Press)
- Lagrange, A. M., Bonnefoy, M., Chauvin, G., et al. 2010, Science, 329, 57
- Lambert, D. L. & Luck, R. E. 1977, ApJ, 211, 443
- Lambert, D. L. & Mallia, E. A. 1972, MNRAS, 156, 337
- Lavigne, J.-F., Doyon, R., Lafrenière, D., Marois, C., & Barman, T. 2009, ApJ, 704, 1098
- Leya, I., Schönbächler, M., Wiechert, U., Krähenbühl, U., & Halliday, A. N. 2008, Earth and Planetary Science Letters, 266, 233

- Ligi, R., Vigan, A., Gratton, R., et al. 2018, MNRAS, 473, 1774
- Lin, D. N. C., Bodenheimer, P., & Richardson, D. C. 1996, Nature, 380, 606
- Lincowski, A. P., Lustig-Yaeger, J., & Meadows, V. S. 2019, AJ, 158, 26
- Line, M. R., Brogi, M., Bean, J. L., et al. 2021, Nature, 598, 580
- Linsky, J. L., Draine, B. T., Moos, H. W., et al. 2006, ApJ, 647, 1106
- Lippincott, E. R., Eck, R. V., Dayhoff, M. O., & Sagan, C. 1967, ApJ, 147, 753
- Lodders, K. 2002, ApJ, 577, 974
- Lothringer, J. D. & Barman, T. 2019, ApJ, 876, 69
- Lothringer, J. D., Barman, T., & Koskinen, T. 2018, ApJ, 866, 27
- Louden, T. & Wheatley, P. J. 2015, ApJ, 814, L24
- Lovelock, J. E. 1965, Nature, 207, 568
- Lovelock, J. E. 1975, Proceedings of the Royal Society of London Series B, 189, 167
- Luger, R. & Barnes, R. 2015, Astrobiology, 15, 119
- Madhusudhan, N. 2019, ARA&A, 57, 617
- Marconi, A., Abreu, M., Adibekyan, V., et al. 2020, in Ground-based and Airborne Instrumentation for Astronomy VIII, ed. C. J. Evans, J. J. Bryant, & K. Motohara, Vol. 11447, International Society for Optics and Photonics (SPIE), 461–472
- Marois, C., Macintosh, B., Barman, T., et al. 2008, Science, 322, 1348
- Mayor, M. & Queloz, D. 1995, Nature, 378, 355
- McKemmish, L. K., Masseron, T., Hoeijmakers, H. J., et al. 2019, MNRAS, 488, 2836
- Meadows, V. S. 2017, Astrobiology, 17, 1022
- Meadows, V. S., Reinhard, C. T., Arney, G. N., et al. 2018, Astrobiology, 18, 630

- Meija, J., Coplen, T. B., Berglund, M., et al. 2016, Pure and Applied Chemistry, 88, 293
- Merritt, S. R., Gibson, N. P., Nugroho, S. K., et al. 2020, A&A, 636, A117
- Mikal-Evans, T., Sing, D. K., Goyal, J. M., et al. 2019, MNRAS, 488, 2222
- Milam, S. N., Savage, C., Brewster, M. A., Ziurys, L. M., & Wyckoff, S. 2005, ApJ, 634, 1126
- Mollière, P. & Snellen, I. A. G. 2019, A&A, 622, A139
- Mollière, P., van Boekel, R., Bouwman, J., et al. 2017, A&A, 600, A10
- Mollière, P., van Boekel, R., Dullemond, C., Henning, T., & Mordasini, C. 2015, ApJ, 813, 47
- Mollière, P., Wardenier, J. P., van Boekel, R., et al. 2019, A&A, 627, A67
- Monnier, J. D., Harries, T. J., Aarnio, A., et al. 2017, ApJ, 838, 20
- Morley, C. V., Skemer, A. J., Miles, B. E., et al. 2019, ApJ, 882, L29
- Müller, A., Keppler, M., Henning, T., et al. 2018, A&A, 617, L2
- Noll, S., Kausch, W., Barden, M., et al. 2012, A&A, 543, A92
- Nugroho, S. K., Gibson, N. P., de Mooij, E. J. W., et al. 2020a, ApJ, 898, L31
- Nugroho, S. K., Gibson, N. P., de Mooij, E. J. W., et al. 2020b, MNRAS, 496, 504
- Nugroho, S. K., Kawahara, H., Gibson, N. P., et al. 2021, ApJ, 910, L9
- Nugroho, S. K., Kawahara, H., Masuda, K., et al. 2017, AJ, 154, 221
- Osorio, M., Anglada, G., Carrasco-González, C., et al. 2014, ApJ, 791, L36
- Parmentier, V., Line, M. R., Bean, J. L., et al. 2018, A&A, 617, A110
- Parmentier, V., Showman, A. P., & Lian, Y. 2013, A&A, 558, A91
- Pavlenko, Y. V., Yurchenko, S. N., McKemmish, L. K., & Tennyson, J. 2020, A&A, 642, A77

- Petit dit de la Roche, D. J. M., Hoeijmakers, H. J., & Snellen, I. A. G. 2018, *A&A*, 616, A146
- Petrus, S., Bonnefoy, M., Chauvin, G., et al. 2021, *A&A*, 648, A59
- Phillips, M. W., Tremblin, P., Baraffe, I., et al. 2020, *A&A*, 637, A38
- Pino, L., Désert, J.-M., Brogi, M., et al. 2020, *ApJ*, 894, L27
- Plez, B. 1998, *A&A*, 337, 495
- Plez, B. 2012, Turbospectrum: Code for spectral synthesis
- Pohl, A., Benisty, M., Pinilla, P., et al. 2017, *ApJ*, 850, 52
- Quanz, S. P., Avenhaus, H., Buenzli, E., et al. 2013, *ApJ*, 766, L2
- Quirrenbach, A., Amado, P. J., Caballero, J. A., et al. 2014, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 9147, Ground-based and Airborne Instrumentation for Astronomy V, ed. S. K. Ramsay, I. S. McLean, & H. Takami, 91471F
- Rajpurohit, A. S., Allard, F., Rajpurohit, S., et al. 2018, *A&A*, 620, A180
- Reggiani, M., Quanz, S. P., Meyer, M. R., et al. 2014, *ApJ*, 792, L23
- Rodler, F. & López-Morales, M. 2014, *ApJ*, 781, 54
- Romano, D., Matteucci, F., Zhang, Z. Y., Papadopoulos, P. P., & Ivison, R. J. 2017, *MNRAS*, 470, 401
- Rucinski, S. 1999, in Astronomical Society of the Pacific Conference Series, Vol. 185, IAU Colloq. 170: Precise Stellar Radial Velocities, ed. J. B. Hearnshaw & C. D. Scarfe, 82
- Sagan, C., Thompson, W. R., Carlson, R., Gurnett, D., & Hord, C. 1993, *Nature*, 365, 715
- Sedaghati, E., Boffin, H. M. J., MacDonald, R. J., et al. 2017, *Nature*, 549, 238
- Segura, A., Kasting, J. F., Meadows, V., et al. 2005, *Astrobiology*, 5, 706
- Serindag, D. B., Nugroho, S. K., Mollière, P., et al. 2021, *A&A*, 645, A90
- Sheppard, K. B., Mandell, A. M., Tamburo, P., et al. 2017, *ApJ*, 850, L32

- Showman, A. P., Fortney, J. J., Lewis, N. K., & Shabram, M. 2013, ApJ, 762, 24
- Showman, A. P., Fortney, J. J., Lian, Y., et al. 2009, ApJ, 699, 564
- Showman, A. P. & Guillot, T. 2002, A&A, 385, 166
- Smith, A. M. S., Anderson, D. R., Skillen, I., Collier Cameron, A., & Smalley, B. 2011, MNRAS, 416, 2096
- Snellen, I. A. G. & Brown, A. G. A. 2018, Nature Astronomy, 2, 883
- Snellen, I. A. G., de Kok, R. J., de Mooij, E. J. W., & Albrecht, S. 2010, Nature, 465, 1049
- Snellen, I. A. G., de Kok, R. J., le Poole, R., Brogi, M., & Birkby, J. 2013, ApJ, 764, 182
- Spiegel, D. S., Silverio, K., & Burrows, A. 2009, ApJ, 699, 1487
- Stevenson, K. B., Désert, J.-M., Line, M. R., et al. 2014, Science, 346, 838
- Tamuz, O., Mazeh, T., & Zucker, S. 2005, MNRAS, 356, 1466
- Tennyson, J. & Yurchenko, S. N. 2012, MNRAS, 425, 21
- Toci, C., Lodato, G., Christiaens, V., et al. 2020, MNRAS, 499, 2015
- Trinquier, A., Elliott, T., Ulfbeck, D., et al. 2009, Science, 324, 374
- Valenti, J. A., Piskunov, N., & Johns-Krull, C. M. 1998, ApJ, 498, 851
- Wagner, K., Follette, K. B., Close, L. M., et al. 2018, ApJ, 863, L8
- Walker, A. R. 1983, South African Astronomical Observatory Circular, 7, 106
- Wood, B. E., Linsky, J. L., Hébrard, G., et al. 2004, ApJ, 609, 838
- Wu, Y.-L., Sheehan, P. D., Males, J. R., et al. 2017, ApJ, 836, 223
- Wyckoff, S. & Wehinger, P. 1972, ApJ, 178, 481
- Yan, F., Pallé, E., Reiners, A., et al. 2020, A&A, 640, L5
- Zechmeister, M., Reiners, A., Amado, P. J., et al. 2018, A&A, 609, A12

- Zhang, J., Dauphas, N., Davis, A. M., Leya, I., & Fedkin, A. 2012, Nature Geoscience, 5, 251
- Zhang, Y., Snellen, I. A. G., Bohn, A. J., et al. 2021a, Nature, 595, 370
- Zhang, Y., Snellen, I. A. G., & Mollière, P. 2021b, A&A, 656, A76