

PUBLICATION LIST

MAJOR REFEREED PUBLICATIONS

1. Squicciarini, V. ; **Mazoyer, J.** ; Lagrange, A.-M. et al. (2024), *The COBREX archival survey: improved constraints on the occurrence rate of wide-orbit substellar companions. I. A uniform re-analysis of 400 stars from the GPIES survey*, (accepted for publication in *Astronomy & Astrophysics*), [arXiv link](#)
2. Gutierrez, Y. ; **Mazoyer, J.** ; Mugnier, L. M. et al. (2024), *Image-based wavefront correction using model-free reinforcement learning*, *Optics Express*, 32, 31247, [DOI link](#), [arXiv link](#)
3. Galicher, R. ; Potier, A. ; **Mazoyer, J.** et al. (2024), *Increasing the raw contrast of VLT/SPHERE with the dark hole technique. III. Broadband reference differential imaging of HR4796 using a four-quadrant phase mask*, *Astronomy and Astrophysics*, 686, A54, [DOI link](#), [arXiv link](#), 1 citation
4. Galicher, R. & **Mazoyer, J.** (2024), *Imaging exoplanets with coronagraphic instruments*, *Comptes Rendus Physique*, 24, 133, [DOI link](#), [arXiv link](#), 9 citations
5. Stasevic, S. ; Milli, J. ; **Mazoyer, J.** et al. (2023), *An inner warp discovered in the disk around HD 110058 using VLT/SPHERE and HST/STIS*, *Astronomy and Astrophysics*, 678, A8, [DOI link](#), [arXiv link](#), 3 citations
6. Potier, A. ; **Mazoyer, J.** ; Wahhaj, Z. et al. (2022), *Increasing the raw contrast of VLT/SPHERE with the dark hole technique. II. On-sky wavefront correction and coherent differential imaging*, *Astronomy and Astrophysics*, 665, A136, [DOI link](#), [arXiv link](#), 15 citations
7. Chen, C. ; **Mazoyer, J.** ; Poteet, C. A. et al. (2020), *Multiband GPI Imaging of the HR 4796A Debris Disk*, *The Astrophysical Journal*, 898, 55, [DOI link](#), [arXiv link](#), 36 citations
8. **Mazoyer, J.** ; Pueyo, L. ; N'Diaye, M. et al. (2018), *Active Correction of Aperture Discontinuities-Optimized Stroke Minimization. II. Optimization for Future Missions*, *The Astronomical Journal*, 155, 8, [DOI link](#), [arXiv link](#), 22 citations
9. **Mazoyer, J.** ; Pueyo, L. ; N'Diaye, M. et al. (2018), *Active Correction of Aperture Discontinuities-Optimized Stroke Minimization. I. A New Adaptive Interaction Matrix Algorithm*, *The Astronomical Journal*, 155, 7, [DOI link](#), [arXiv link](#), 18 citations
10. Fogarty, K. ; Pueyo, L. ; **Mazoyer, J.** et al. (2017), *Polynomial Apodizers for Centrally Obscured Vortex Coronagraphs*, *The Astronomical Journal*, 154, 240, [DOI link](#), [arXiv link](#), 10 citations
11. **Mazoyer, J.** ; Pueyo, L. ; Norman, C. et al. (2016), *Active compensation of aperture discontinuities for WFIRST-AFTA: analytical and numerical comparison of propagation methods and preliminary results with a WFIRST-AFTA-like pupil*, *Journal of Astronomical Telescopes, Instruments, and Systems*, 2, 011008, [DOI link](#), [arXiv link](#), 9 citations
12. **Mazoyer, J.** ; Boccaletti, A. ; Choquet, É. et al. (2016), *A Symmetric Inner Cavity in the HD 141569A Circumstellar Disk*, *The Astrophysical Journal*, 818, 150, [DOI link](#), [arXiv link](#), 13 citations
13. **Mazoyer, J.** ; Boccaletti, A. ; Augereau, J. -C. et al. (2014), *Is the HD 15115 inner disk really asymmetrical?*, *Astronomy and Astrophysics*, 569, A29, [DOI link](#), [arXiv link](#), 34 citations
14. **Mazoyer, J.** ; Baudoz, P. ; Galicher, R. et al. (2014), *High-contrast imaging in polychromatic light with the self-coherent camera*, *Astronomy and Astrophysics*, 564, L1, [DOI link](#), [arXiv link](#), 34 citations
15. **Mazoyer, J.** ; Baudoz, P. ; Galicher, R. et al. (2013), *Estimation and correction of wavefront aberrations using the self-coherent camera: laboratory results*, *Astronomy and Astrophysics*, 557, A9, [DOI link](#), [arXiv link](#), 37 citations

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1. Wilkinson, C. ; Charnay, B. ; Mazevet, S. et al. (2024), *Breaking degeneracies in exoplanetary parameters through self-consistent atmosphere–interior modelling*, (accepted for publication in **Astronomy & Astrophysics**), [arXiv link](#)
2. Lewis, B. L. ; Fitzgerald, M. P. ; Esposito, T. M. et al. (2024), *Gemini Planet Imager Observations of a Resolved Low-inclination Debris Disk around HD 156623*, The Astronomical Journal, 168, 142, [DOI link](#), [arXiv link](#)
3. Goulas, C. ; Galicher, R. ; Vidal, F. et al. (2024), *Numerical simulations for the SAXO+ upgrade: Performance analysis of the adaptive optics system*, Astronomy and Astrophysics, 689, A199, [DOI link](#), [arXiv link](#), 2 citations
4. Petrus, S. ; Whiteford, N. ; Patapis, P. et al. (2024), *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. V. Do Self-consistent Atmospheric Models Represent JWST Spectra? A Showcase with VHS 1256–1257 b*, The Astrophysical Journal, 966, L11, [DOI link](#), [arXiv link](#), 12 citations
5. Hom, J. ; Patience, J. ; Chen, C. H. et al. (2024), *A uniform analysis of debris discs with the Gemini Planet Imager II: constraints on dust density distribution using empirically informed scattering phase functions*, Monthly Notices of the Royal Astronomical Society, 528, 6959, [DOI link](#), [arXiv link](#), 4 citations
6. Sallum, S. ; Ray, S. ; Kammerer, J. et al. (2024), *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. IV. NIRISS Aperture Masking Interferometry Performance and Lessons Learned*, The Astrophysical Journal, 963, L2, [DOI link](#), [arXiv link](#), 4 citations
7. Worthen, K. ; Chen, C. H. ; Brittain, S. D. et al. (2024), *Vertical Structure of Gas and Dust in Four Debris Disks*, The Astrophysical Journal, 962, 166, [DOI link](#), [arXiv link](#), 1 citation
8. Crotts, K. A. ; Matthews, B. C. ; Duchêne, G. et al. (2024), *A Uniform Analysis of Debris Disks with the Gemini Planet Imager. I. An Empirical Search for Perturbations from Planetary Companions in Polarized Light Images*, The Astrophysical Journal, 961, 245, [DOI link](#), [arXiv link](#), 5 citations
9. Vaughan, S. R. ; Gebhard, T. D. ; Bott, K. et al. (2023), *Chasing rainbows and ocean glints: Inner working angle constraints for the Habitable Worlds Observatory*, Monthly Notices of the Royal Astronomical Society, 524, 5477, [DOI link](#), [arXiv link](#), 13 citations
10. Carter, A. L. ; Hinkley, S. ; Kammerer, J. et al. (2023), *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems I: High-contrast Imaging of the Exoplanet HIP 65426 b from 2 to 16 μm* , The Astrophysical Journal, 951, L20, [DOI link](#), [arXiv link](#), 62 citations
11. Miles, B. E. ; Biller, B. A. ; Patapis, P. et al. (2023), *The JWST Early-release Science Program for Direct Observations of Exoplanetary Systems II: A 1 to 20 μm Spectrum of the Planetary-mass Companion VHS 1256-1257 b*, The Astrophysical Journal, 946, L6, [DOI link](#), [arXiv link](#), 93 citations
12. Hinkley, S. ; Carter, A. L. ; Ray, S. et al. (2022), *The JWST Early Release Science Program for the Direct Imaging and Spectroscopy of Exoplanetary Systems*, Publications of the Astronomical Society of the Pacific, 134, 095003, [DOI link](#), [arXiv link](#), 45 citations
13. Crotts, K. A. ; Draper, Z. H. ; Matthews, B. C. et al. (2022), *A Multiwavelength Study of the Highly Asymmetrical Debris Disk around HD 111520*, The Astrophysical Journal, 932, 23, [DOI link](#), [arXiv link](#), 5 citations
14. Betti, S. K. ; Follette, K. ; Jorquera, S. et al. (2022), *Detection of Near-infrared Water Ice at the Surface of the (Pre)Transitional Disk of AB Aur: Informing Icy Grain Abundance, Composition, and Size*, The Astronomical Journal, 163, 145, [DOI link](#), [arXiv link](#), 14 citations
15. Singh, G. ; Bhowmik, T. ; Boccaletti, A. et al. (2021), *Revealing asymmetrical dust distribution in the inner regions of HD 141569*, Astronomy and Astrophysics, 653, A79, [DOI link](#), [arXiv link](#), 11 citations
16. Crotts, K. A. ; Matthews, B. C. ; Esposito, T. M. et al. (2021), *A Deep Polarimetric Study of the Asymmetrical Debris Disk HD 106906*, The Astrophysical Journal, 915, 58, [DOI link](#), [arXiv link](#), 14 citations

17. Arriaga, P. ; Fitzgerald, M. P. ; Duchêne, G. et al. (2020), *Multiband Polarimetric Imaging of HR 4796A with the Gemini Planet Imager*, The Astronomical Journal, 160, 79, [DOI link](#), [arXiv link](#), 29 citations
18. Esposito, T. M. ; Kalas, P. ; Fitzgerald, M. P. et al. (2020), *Debris Disk Results from the Gemini Planet Imager Exoplanet Survey's Polarimetric Imaging Campaign*, The Astronomical Journal, 160, 24, [DOI link](#), [arXiv link](#), 83 citations
19. Duchêne, G. ; Rice, M. ; Hom, J. et al. (2020), *The Gemini Planet Imager View of the HD 32297 Debris Disk*, The Astronomical Journal, 159, 251, [DOI link](#), [arXiv link](#), 22 citations
20. Ertel, S. ; Defrère, D. ; Hinz, P. et al. (2020), *The HOSTS Survey for Exozodiacal Dust: Observational Results from the Complete Survey*, The Astronomical Journal, 159, 177, [DOI link](#), [arXiv link](#), 97 citations
21. Bruzzone, J. S. ; Metchev, S. ; Duchêne, G. et al. (2020), *Imaging the 44 au Kuiper Belt Analog Debris Ring around HD 141569A with GPI Polarimetry*, The Astronomical Journal, 159, 53, [DOI link](#), [arXiv link](#), 10 citations
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23. Bhowmik, T. ; Boccaletti, A. ; Thébault, P. et al. (2019), *Spatially resolved spectroscopy of the debris disk HD 32297. Further evidence of small dust grains*, Astronomy and Astrophysics, 630, A85, [DOI link](#), [arXiv link](#), 27 citations
24. Ren, B. ; Choquet, É. ; Perrin, M. D. et al. (2019), *An Exo-Kuiper Belt with an Extended Halo around HD 191089 in Scattered Light*, The Astrophysical Journal, 882, 64, [DOI link](#), [arXiv link](#), 39 citations
25. Stark, C. C. ; Belikov, R. ; Bolcar, M. R. et al. (2019), *ExoEarth yield landscape for future direct imaging space telescopes*, Journal of Astronomical Telescopes, Instruments, and Systems, 5, 024009, [DOI link](#), [arXiv link](#), 57 citations
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27. Esposito, T. M. ; Duchêne, G. ; Kalas, P. et al. (2018), *Direct Imaging of the HD 35841 Debris Disk: A Polarized Dust Ring from Gemini Planet Imager and an Outer Halo from HST/STIS*, The Astronomical Journal, 156, 47, [DOI link](#), [arXiv link](#), 32 citations
28. Leboulleux, L. ; Sauvage, J. -F. ; Pueyo, L. A. et al. (2018), *Pair-based Analytical model for Segmented Telescopes Imaging from Space for sensitivity analysis*, Journal of Astronomical Telescopes, Instruments, and Systems, 4, 035002, [DOI link](#), [arXiv link](#), 20 citations
29. Poteet, C. A. ; Chen, C. H. ; Hines, D. C. et al. (2018), *Space-based Coronagraphic Imaging Polarimetry of the TW Hydrae Disk: Shedding New Light on Self-shadowing Effects*, The Astrophysical Journal, 860, 115, [DOI link](#), [arXiv link](#), 12 citations
30. Jensen-Clem, R. ; Mawet, D. ; Gomez Gonzalez, C. A. et al. (2018), *A New Standard for Assessing the Performance of High Contrast Imaging Systems*, The Astronomical Journal, 155, 19, [DOI link](#), [arXiv link](#), 32 citations
31. Perrot, C. ; Boccaletti, A. ; Pantin, E. et al. (2016), *Discovery of concentric broken rings at sub-arcsec separations in the HD 141569A gas-rich, debris disk with VLT/SPHERE*, Astronomy and Astrophysics, 590, L7, [DOI link](#), [arXiv link](#), 42 citations
32. Delorme, J. R. ; Galicher, R. ; Baudoz, P. et al. (2016), *Focal plane wavefront sensor achromatization: The multireference self-coherent camera*, Astronomy and Astrophysics, 588, A136, [DOI link](#), [arXiv link](#), 18 citations
33. Choquet, É. ; Perrin, M. D. ; Chen, C. H. et al. (2016), *First Images of Debris Disks around TWA 7, TWA 25, HD 35650, and HD 377*, The Astrophysical Journal, 817, L2, [DOI link](#), [arXiv link](#), 74 citations
34. Debes, J. H. ; Ygouf, M. ; Choquet, E. et al. (2016), *Wide-Field Infrared Survey Telescope-Astrophysics Focused Telescope Assets coronagraphic operations: lessons learned from the Hubble Space Telescope*

- and the James Webb Space Telescope, *Journal of Astronomical Telescopes, Instruments, and Systems*, 2, 011010, [DOI link](#), [arXiv link](#), 11 citations
35. Wiens, R. C. ; Maurice, S. ; Lasue, J. et al. (2013), *Pre-flight calibration and initial data processing for the ChemCam laser-induced breakdown spectroscopy instrument on the Mars Science Laboratory rover*, *Spectrochimica Acta - Part B: Atomic Spectroscopy*, 82, 1, [DOI link](#), 166 citations
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MAJOR CONFERENCE PROCEEDINGS

1. Gutierrez, Y. ; Mazoyer, J. ; Herscovici-Schiller, O. et al. (2024), *A deep reinforcement learning approach to wavefront control for exoplanet imaging*, *Space Telescopes and Instrumentation 2024: Optical, Infrared, and Millimeter Wave*, 13092, 130926H, [DOI link](#)
2. Mazoyer, J. ; Goulas, C. ; Vidal, F. et al. (2024), *Upgrading SPHERE with the second stage AO system SAXO+: non-common path aberrations estimation and correction*, *Ground-based and Airborne Instrumentation for Astronomy X*, 13096, 130969D, [DOI link](#)
3. Fogarty, K. ; Mawet, D. ; Mazoyer, J. et al. (2020), *Towards high throughput and low-order aberration robustness for vortex coronagraphs with central obstructions*, *Space Telescopes and Instrumentation 2020: Optical, Infrared, and Millimeter Wave*, 11443, 114433Y, [DOI link](#), 1 citation
4. Mazoyer, J. ; Arriaga, P. ; Hom, J. et al. (2020), *DiskFM: A forward modeling tool for disk analysis with coronagraphic instruments*, *Ground-based and Airborne Instrumentation for Astronomy VIII*, 11447, 1144759, [DOI link](#), [arXiv link](#), 6 citations
5. Fogarty, K. ; Mazoyer, J. ; St. Laurent, K. et al. (2018), *Optimal deformable mirror and pupil apodization combinations for apodized pupil Lyot coronagraphs with obstructed pupils*, *Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave*, 10698, 106981J, [DOI link](#), 2 citations
6. Ruane, G. ; Riggs, A. ; Mazoyer, J. et al. (2018), *Review of high-contrast imaging systems for current and future ground- and space-based telescopes I: coronagraph design methods and optical performance metrics*, *Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave*, 10698, 106982S, [DOI link](#), [arXiv link](#), 13 citations
7. Mazoyer, J. ; Pueyo, L. ; N'Diaye, M. et al. (2017), *Capabilities of ACAD-OSM, an active method for the correction of aperture discontinuities*, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 10400, 104000G, [DOI link](#), [arXiv link](#), 2 citations
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9. Lebouilleux, L. ; N'Diaye, M. ; Mazoyer, J. et al. (2017), *Comparison of wavefront control algorithms and first results on the high-contrast imager for complex aperture telescopes (hicat) testbed*, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 10562, 105622Z, [DOI link](#)
10. Fogarty, K. ; Pueyo, L. ; Mazoyer, J. et al. (2017), *Tip/tilt optimizations for polynomial apodized vortex coronagraphs on obscured telescope pupils*, *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 10400, 104000T, [DOI link](#), 2 citations
11. Mazoyer, J. ; Pueyo, L. ; N'Diaye, M. et al. (2016), *Correcting for the effects of pupil discontinuities with the ACAD method*, *Space Telescopes and Instrumentation 2016: Optical, Infrared, and Millimeter Wave*, 9904, 99044T, [DOI link](#), [arXiv link](#), 2 citations
12. Mazoyer, J. ; Pueyo, L. ; Norman, C. et al. (2015), *Active compensation of aperture discontinuities for WFIRST- AFTA: analytical and numerical comparison of propagation methods and preliminary results with an AFTA like pupil*, *Nancy Grace Roman Space Telescope Technical Reports*, 1505

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14. N'Diaye, M. ; **Mazoyer, J.** ; Choquet, É. et al. (2015), *High-contrast imager for complex aperture telescopes (HiCAT): 3. first lab results with wavefront control*, Techniques and Instrumentation for Detection of Exoplanets VII, 9605, 96050I, [DOI link](#), [arXiv link](#), 20 citations
15. **Mazoyer, J.** ; Galicher, R. ; Baudoz, P. et al. (2014), *Deformable mirror interferometric analysis for the direct imagery of exoplanets*, Adaptive Optics Systems IV, 9148, 914846, [DOI link](#), [arXiv link](#), 1 citation
16. **Mazoyer, J.** ; Baudoz, P. ; Galicher, R. et al. (2013), *Direct detection of exoplanets in polychromatic light with a Self-coherent camera*, Proceedings of the Third AO4ELT Conference, 97, [DOI link](#)
17. Baudoz, P. ; **Mazoyer, J.** ; Galicher, R. (2013), *Laboratory tests of planet signal extraction in high contrast images*, Proceedings of the Third AO4ELT Conference, 109, [DOI link](#), 2 citations
18. **Mazoyer, J.** ; Galicher, R. ; Baudoz, P. et al. (2013), *Speckle correction in polychromatic light with the self-coherent camera for the direct detection of exoplanets*, Techniques and Instrumentation for Detection of Exoplanets VI, 8864, 88640N, [DOI link](#), [arXiv link](#), 1 citation
19. Galicher, R. ; **Mazoyer, J.** ; Baudoz, P. et al. (2013), *High-contrast imaging with a self-coherent camera*, Techniques and Instrumentation for Detection of Exoplanets VI, 8864, 88640M, [DOI link](#)
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21. Mas, M. ; Baudoz, P. ; **Mazoyer, J.** et al. (2012), *Experimental results on wavefront correction using the self-coherent camera*, Ground-based and Airborne Instrumentation for Astronomy IV, 8446, 844689, [DOI link](#), 4 citations
22. **Mazoyer, J.** ; Baudoz, P. ; Mas, M. et al. (2012), *Experimental parametric study of the self-coherent camera*, Space Telescopes and Instrumentation 2012: Optical, Infrared, and Millimeter Wave, 8442, 844250, [DOI link](#), [arXiv link](#), 2 citations
23. Gasnault, O. ; **Mazoyer, J.** ; Cousin, A. et al. (2012), *Deciphering Sample and Atmospheric Oxygen Contents with ChemCam on Mars*, 43rd Annual Lunar and Planetary Science Conference, 2888, 1 citation

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1. Stadler, E. ; Schreiber, L. ; Cortecchia, F. et al. (2024), *Upgrading SPHERE with the second-stage adaptive optics system SAXO+: conceptual design of the opto-mechanical module*, Adaptive Optics Systems IX, 13097, 130976S, [DOI link](#)
2. Goulas, C. ; Galicher, R. ; Vidal, F. et al. (2024), *Upgrading SPHERE with the second stage AO system SAXO+: exploration of the parameter space with end-to-end numerical simulations*, Adaptive Optics Systems IX, 13097, 1309769, [DOI link](#)
3. Cantalloube, F. ; Christiaens, V. ; Cantero, C. et al. (2024), *Exoplanet imaging data challenge, phase II: comparison of algorithms in terms of characterization capabilities*, Adaptive Optics Systems IX, 13097, 1309713, [DOI link](#), [arXiv link](#)
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5. Savransky, D. ; Bailey, V. P. ; Wolff, S. G. et al. (2024), *The Nancy Grace Roman Space Telescope coronagraph community participation program*, Space Telescopes and Instrumentation 2024: Optical, Infrared, and Millimeter Wave, 13092, 130921I, [DOI link](#)
6. Millar-Blanchaer, M. A. ; Wang, J. ; Bogat, E. et al. (2024), *The Roman coronagraph community participation program: data reduction and simulations*, Space Telescopes and Instrumentation 2024: Optical, Infrared, and Millimeter Wave, 13092, 1309256, [DOI link](#)

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18. Snik, F. ; Absil, O. ; Baudoz, P. et al. (2018), *Review of high-contrast imaging systems for current and future ground-based and space-based telescopes III: technology opportunities and pathways*, Advances in Optical and Mechanical Technologies for Telescopes and Instrumentation III, 10706, 107062L, [DOI link](#), [arXiv link](#), 3 citations
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20. Jovanovic, N. ; Absil, O. ; Baudoz, P. et al. (2018), *Review of high-contrast imaging systems for current and future ground-based and space-based telescopes: Part II. Common path wavefront sensing/control and coherent differential imaging*, Adaptive Optics Systems VI, 10703, 107031U, [DOI link](#), [arXiv link](#), 15 citations
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