

# Johan MAZOYER

Research Interests: Optical Instrumentation, Direct Imaging & Coronagraphy, Observation & Characterization of Extrasolar Systems, Debris Disks

## 1 RESEARCH POSITIONS

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CNRS Scientist – <b>LIRA/Paris Observatory - PSL</b> (France)	Since 2020
Carl Sagan Fellow – <b>NASA Jet Propulsion Laboratory</b> (Pasadena, CA)	2018 - 2019
Postdoc – <b>Johns Hopkins University</b> (Baltimore, MD)	2016 - 2018
Postdoc – <b>Space Telescope Science Institute</b> (Baltimore, MD)	2014 - 2016
Graduate Student – <b>LIRA/Paris Observatory - PSL</b> (France)	2011 - 2014

## 2 EDUCATION

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French habilitation (HDR) – <b>Paris Observatory - PSL</b> (France)	March 2024
PhD – Astronomy & Astrophysics – <b>Université Paris Cité</b> (Paris, France) <i>Thesis: High-Contrast Imaging Of Exoplanets And Circumstellar Disks (P. Baudoz &amp; G. Rousset)</i>	Sept. 2014
Master – Astrophysics & Planetology – <b>Université de Toulouse</b> (Toulouse, France) <i>Thesis: Influence of Mars atmosphere on ChemCam detection limits (O. Gasnault &amp; R. Wiens)</i>	Sept. 2011
Master – Techniques for Space Imaging – <b>ISAE Supaero</b> (Toulouse, France)	Sept. 2011
Bachelor – Embedded systems – <b>Ecole polytechnique</b> (Paris, France)	Sept. 2010

## 3 GRANTS & AWARDS

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ERC - Consolidator Grant (PI) ECHOES - 2 M€	Since 2026
ANR / PEPR Origins (PI) AMINO - 1.1 M€	Since 2026
ANR JCJC (PI) (terminated and reimbursed) - 370 k€	2025-2026
DIM Origins (PI) Hardware funding for a spatial light modulator - 20 k€	2023
CNES (co-PI) Postdoc fund for I. Laginja - 60 k€ / 2yrs	2022
Data Intensive Artificial Intelligence program (PI) PhD fund Y. Gutierrez - 120 k€/3yrs	2021
EcosSud Program (PI) for collaboration with <i>Universidad de Chile</i> – 50 k€	2020
NASA Group Award: LBTI Hosts Survey Science Team	2020
Carl Sagan Fellowship (NASA Hubble Fellowship Program) – 280k€/3 yrs	2018
Cover of <b>Astronomy &amp; Astrophysics</b> Journal ( <b>Volume 564</b> )	2014
Outstanding Presentation Award (CNES fellow symposium JC <sup>2</sup> )	2013
CNES Doctoral Research Fellowship (French space agency) – 50 k€/year	2011

## 4 OUTREACH

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I am heavily involved in scientific outreach in France. In addition to regular class or public interventions, I am running institutional events and associative initiatives:

- **Podcast Science:** I am running **PodcastScience.fm**, a **general science program**, airing every weeks, in french. Listened by 10'000 to 20'000 listeners, Podcast Science received the Golden blog award for best scientific blog in 2012.
- **Les p'tits cueilleurs d'étoiles:** Association organizing astronomers visits in children hospitals in France. I am organizing all Paris region hospitals (25 visits/yr).
- **Fête de la science:** I was the main organizer of the annual Paris Observatory Doors Open Days (~1000 visitors each year) for two consecutive years (2023 and 2024)

## 5 PROFESSIONAL ACTIVITIES & SERVICE

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### Responsibilities in scientific instruments:

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| • <b>Roman Space Telescope Coronagraph:</b> Deputy CNES representative       | Since 2023 |
| • <b>VLT/SPHERE+:</b> Dark-Hole work package leader                          | Since 2022 |
| • <b>Habitable Exoplanet Observatory (HabEx):</b> Contributing Scientist     | 2019       |
| • <b>Large UV Optical Infrared Surveyor (LUVOIR):</b> Contributing Scientist | 2019       |
| • <b>Gemini Planet Imager (GPI):</b> junior member of the consortium         | 2017-2020  |

### Organization of Scientific Meetings:

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| • Roman coronagraphic instrument summer school (SOC) | Nice, March 2026 |
| • ExoSystèmes 4 (SOC)                                | Lyon, 2024       |
| • National Capital Area Disks conference (SOC & LOC) | Baltimore 2018   |
| • Optimal Optical Coronagraphs workshop (SOC & LOC)  | Leiden, 2017     |
| • High Contrast Imaging from Space (SOC)             | Baltimore, 2016  |
| • Workshop “très haute dynamique” (LOC)              | Paris, 2012      |

### Other services:

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| • <b>“Exoplanetary systems” Group Leader</b> at Paris Observatory / LIRA                         | Since 2025  |
| • <b>Hubble Telescope Allocation Committee</b>   | 2024        |
| • Science Commity of CNRS/INSU’s exoplanets group ( <b>CET exoplanètes</b> )                     | 2023 - 2024 |
| • Science Commity of CNRS/INSU’s High Angular Resolution Group ( <b>CS-ASHRA</b> )               | Since 2021  |
| • <b>Reviewer</b> for <i>AJ</i> , <i>A&amp;A</i> , <i>MNRAS</i> , <i>PASP</i> and <i>JATIS</i> . |             |

## 6 MENTORING

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<b>Manuela Castañeda Medina</b> (PhD, ONERA): co-direction with L. Mugnier	Since 2026
<b>Lukas Delaye</b> (PhD, LIRA): co-director with A. Potier	Since 2025
<b>Yann Gutierrez</b> (PhD, LIRA): co-director with L. Mugnier, ONERA	2022-2025
<b>Vito Squicciarini</b> (Postdoc, LIRA): co-advisor with A.-M. Lagrange	2022-2024
<b>Iva Laginja</b> (Postdoc, LIRA): main advisor ; CNES Fellow. Now Resercher at Obs Côte D’Azur	2022-2024
<b>Sophia Stasevic</b> (PhD, LIRA) co-director with A.-M. Lagrange and J. Milli	2021-2025
<b>Justin Hom</b> (PhD, ASU) co-advisor with J. Patience	2019-2023
<b>Kevin Fogarty</b> (PhD, JHU) co-advisor with L. Pueyo. Now Research Scientist at AMES	2017-2019

## 7 TEACHING

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### Observatoire de Paris Master Class:

- Instrumentation for Astronomy
- Detection of Exoplanets

## RESEARCH ACHIEVEMENTS

I have a longstanding interest in developing innovative high-contrast techniques, which are critical for detecting and characterizing faint objects orbiting closely to bright stars (exoplanets and dust belts). Over the years, I have gained extensive expertise in the analytical understanding and numerical simulation of these systems for both space- and ground-based instruments, achieving unprecedented performance on experimental testbeds and on-sky. Additionally, I am deeply engaged in exosystem science, having analyzed coronagraphic data from various high-contrast instruments. My research complementary integrates instrumental development and observational studies. As coronagraphic instruments grow in complexity, maximizing their potential requires instrumentation expertise, and the insights gained from on-sky observations are essential for shaping future instrumental advancements.

**61 accepted papers in peer-reviewed journals, including:**

- **7 papers as first author + 1 as co-first author,**
- **10 papers with major contributions (2nd or 3rd author),**
- **43 papers with more minor contributions.**

**52 conference proceedings (mainly SPIE), including 11 as first author.**

All my papers and proceedings are in open access.

Google Scholar analytics: **3398 citations – h-index = 32.**

## MAJOR REFEREEED PUBLICATIONS

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1. Squicciarini, V. ; **Mazoyer, J.** ; Wilkinson, C. et al. (**2025**), *GPI+SPHERE detection of a 6.1  $M_{Jup}$  circumbinary planet around HD 143811*, Astronomy and Astrophysics, 702, L10, [DOI link](#), [arXiv link](#), 2 citations
2. Stasevic, S. ; Milli, J. ; **Mazoyer, J.** et al. (**2025**), *Optimising reference library selection for reference-star differential imaging of discs with SPHERE/IRDIS*, Astronomy and Astrophysics, 701, A93, [DOI link](#), [arXiv link](#)
3. Laginja, I. ; Baudoz, P. ; **Mazoyer, J.** et al. (**2025**), *Extended linearity in the high-order wavefront sensor for the Roman Coronagraph*, Astronomy and Astrophysics, 698, A130, [DOI link](#), [arXiv link](#), 2 citations
4. Squicciarini, V. ; **Mazoyer, J.** ; Lagrange, A. -M. et al. (**2025**), *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*, Astronomy and Astrophysics, 693, A54, [DOI link](#), [arXiv link](#), 9 citations
5. 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](#)
6. 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](#), 4 citations
7. Galicher, R. & **Mazoyer, J.** (**2024**), *Imaging exoplanets with coronagraphic instruments*, Comptes Rendus Physique, 24, 133, [DOI link](#), [arXiv link](#), 19 citations
8. 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](#), 9 citations
9. 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](#), 23 citations
10. 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](#), 38 citations

11. **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, 23 citations
12. **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
13. 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
14. **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
15. **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, 14 citations
16. **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, 35 citations
17. **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, 36 citations
18. **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, 41 citations

## OTHER REFERRED PUBLICATIONS

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1. Potier, A. ; Galicher, R. ; Baudoz, P. et al. (2025), *Coherent differential imaging of high-contrast extended sources with VLT/SPHERE*, Astronomy and Astrophysics, 704, A98, DOI link, arXiv link
2. Hom, J. ; Esposito, T. M. ; Crotts, K. A. et al. (2025), *The Disks In Scorpius-Centaurus Survey (DISCS). I. Four Newly Resolved Debris Disks in Polarized Intensity Light*, The Astronomical Journal, 170, 46, DOI link, arXiv link, 2 citations
3. Lagrange, A. -M. ; Wilkinson, C. ; Mâlin, M. et al. (2025), *Evidence for a sub-Jovian planet in the young TWA 7 disk*, Nature, 642, 905, DOI link, arXiv link, 18 citations
4. Desgrange, C. ; Milli, J. ; Chauvin, G. et al. (2025), *Dust populations from 30 to 1000 au in the debris disk of HD 120326: Panchromatic view with VLT/SPHERE, ALMA, and HST/STIS*, Astronomy and Astrophysics, 698, A183, DOI link, arXiv link, 1 citation
5. Chomez, A. ; Delorme, P. ; Lagrange, A. -M. et al. (2025), *The SPHERE infrared survey for exoplanets (SHINE): IV. Complete observations, data reduction and analysis, detection performances, and final results*, Astronomy and Astrophysics, 697, A99, DOI link, arXiv link, 7 citations
6. Ray, S. ; Sallum, S. ; Hinkley, S. et al. (2025), *The JWST Early Release Science Program for Direct Observations of Exoplanetary Systems. III. Aperture Masking Interferometric Observations of the Star HIP 65426 at 3.8 μm*, The Astrophysical Journal, 983, L25, DOI link, arXiv link, 9 citations
7. Laginja, I. ; Carrión-González, Ó. ; Laugier, R. et al. (2025), *Advancing European high-contrast imaging R&D towards the Habitable Worlds Observatory*, Astrophysics and Space Science, 370, 29, DOI link, arXiv link
8. Wilkinson, C. ; Charnay, B. ; Mazevet, S. et al. (2024), *Breaking degeneracies in exoplanetary parameters through self-consistent atmosphere–interior modelling*, Astronomy and Astrophysics, 692, A113, DOI link, arXiv link, 6 citations
9. 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, 2 citations

10. 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
11. 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, 34 citations
12. 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, 8 citations
13. 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, 12 citations
14. 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, 3 citations
15. 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, 15 citations
16. 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, 38 citations
17. 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, 102 citations
18. 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, 157 citations
19. 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, 55 citations
20. 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, 8 citations
21. 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, 19 citations
22. 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, 13 citations
23. 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, 16 citations
24. 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, 34 citations
25. 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, 108 citations
26. 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, 25 citations

27. 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](#), 121 citations
28. 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](#), 12 citations
29. Hom, J. ; Patience, J. ; Esposito, T. M. et al. (**2020**), *First Resolved Scattered-light Images of Four Debris Disks in Scorpius-Centaurus with the Gemini Planet Imager*, The Astronomical Journal, 159, 31, [DOI link](#), [arXiv link](#), 15 citations
30. 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](#), 31 citations
31. 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](#), 41 citations
32. 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](#), 75 citations
33. Engler, N. ; Boccaletti, A. ; Schmid, H. M. et al. (**2019**), *Investigating the presence of two belts in the HD 15115 system*, Astronomy and Astrophysics, 622, A192, [DOI link](#), [arXiv link](#), 32 citations
34. 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](#), 34 citations
35. 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
36. Poteet, C. A. ; Chen, C. H. ; Hines, D. C. et al. (**2018**), *Space-based Coronagraphic Imaging Polarimetry of the TW Hydreae Disk: Shedding New Light on Self-shadowing Effects*, The Astrophysical Journal, 860, 115, [DOI link](#), [arXiv link](#), 13 citations
37. 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](#), 34 citations
38. 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](#), 45 citations
39. 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](#), 19 citations
40. 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](#), 83 citations
41. 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
42. 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](#), 175 citations
43. Cousin, A. ; Forni, O. ; Maurice, S. et al. (**2011**), *Laser induced breakdown spectroscopy library for the Martian environment*, Spectrochimica Acta - Part B: Atomic Spectroscopy, 66, 805, [DOI link](#), 61 citations

## MAJOR CONFERENCE PROCEEDINGS

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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](#), [arXiv link](#), 1 citation
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](#), 9 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](#), 17 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
8. **Mazoyer, J.** & Pueyo, L. (2017), *Fundamental limits to high-contrast wavefront control*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10400, 1040014, [DOI link](#), [arXiv link](#), 3 citations
9. Leboulleux, 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 Report WFIRST-STScI-TR1505, WFIRST-STScI-TR1505
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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](#), 22 citations
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