

Johan MAZOYER

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

1 RESEARCH POSITIONS

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

2 EDUCATION

PhD – Astronomy & Astrophysics – Université Paris Diderot (France) <i>Thesis Advisors:</i> P. Baudoz & G. Rousset <i>Sujet:</i> High-Contrast Direct Imaging Of Exoplanets And Circumstellar Disks	09/2014
Master – Astrophysics – Université Paul Sabatier (Toulouse, France) <i>Master Thesis Advisors:</i> O. Gasnault & R. Wiens <i>Thesis:</i> Influence of Mars atmosphere on the ChemCam abundance detection limits	09/2011
Master – Space Engineering – ISAE Supaero (Toulouse, France)	09/2011
Bachelor – Computer Science – Ecole polytechnique (Paris, France)	09/2010

3 GRANTS & AWARDS

Franco-Chilean Collaboration Program Ecosud with <i>Universidad de Chile</i> – 3 yrs	2020
NASA Group Award: LBTI Hosts Survey Science Team	2020
Carl Sagan Fellowship (NASA Hubble Fellowship Program) – 3 yrs	2018
Cover of Astronomy & Astrophysics Journal (Volume 564)	2014
CNES Doctoral Research Fellowship (French space agency) – 3 yrs	2011
Ecole Polytechnique Scholarship – 4 yrs	2007

4 OUTREACH



Podcast Science: I am running **PodcastScience.fm**, a general science program, airing every Wednesdays, in french. This podcast is listened by 10'000 to 20'000 listeners. Podcast Science received the Golden blog award for best scientific blog in 2012.

Public talks: CERN & Palais de la découverte (Paris)

5 PROFESSIONAL ACTIVITIES & SERVICE

Conference, Workshop and Seminar Organizer:

- Seminar “**Haute Résolution Angulaire pour l’Astrophysique**” (**HRAA**) at LESIA (2020-)
- Organizer and SOC: **National Capital Area Disks** workshop (Baltimore, MD, Oct. 2018) - [website](#)
- Organizer and SOC: **Optimal Optical Coronagraphs** workshop (Leiden, NL, Sep. 2017) - [website](#)
- Seminar “**Exoplanet Star and Planet Formation**” (**ESPF**) at STScI (2016-2018)
- SOC: **High Contrast Imaging from Space** (Baltimore, MD, Nov. 2016) - [website](#)
- LOC: Workshop **très haute dynamique** (Paris, 2012)

Other Services:

- Head of high-contrast imaging team at LESIA 2023 -
- Science Commity of CNRS/INSU’s exoplanets group (**CET exoplanètes**) 2023 -
- **Roman**: Deputy CNES representative in Community Participation Program (CPP) Team 2023 -
- **SPHERE+**: Responsible of the Focal Plane Wavefront Sensor working group 2022 -
- Science Commity of CNRS/INSU’s High Angular Resolution Group (**CS-ASHRA**) 2021 -
- **Habitable Exoplanet Observatory (HabEx)**: Contributing Scientist 2019
- **Large UV Optical Infrared Surveyor (LUVOIR)**: Contributing Scientist 2019
- IAU Junior member 2019 -
- **Hubble Telescope Allocation Committee** panel support 2016
- **Referee** for publications in the *AJ*, *A&A*, *MNRAS*, *PASP* and *JATIS*.

6 MENTORING

Vito Squicciarini (Postdoc, LESIA): co-advisor with A.-M. Lagrange	Since 2022
Yann Gutierrez (PhD, LESIA): co-advisor with L. Mugnier, ONERA	Since 2022
Iva Laginja (Postdoc, LESIA): CNES post-doctoral Fellow	Since 2022
Sophia Stasevic (PhD, LESIA) co-advisor with A.-M. Lagrange and J. Milli	Since 2021

7 TEACHING

Observatoire de Paris Master Class:

- Instrumentation for Astronomy
- Detection of Exoplanets (collab. Anne-Marie Lagrange)

PUBLICATION LIST

MAJOR REFEREED PUBLICATIONS

- Galicher, R. ; Potier, A. ; **Mazoyer, J.** et al. *Increasing the raw contrast of VLT/SPHERE with the dark hole technique. III. Broadband reference differential imaging of HR 4796 using a four quadrant phase mask (accepted in A & A)*
- 1. 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
- 2. Galicher, R. & **Mazoyer, J.** (2023), *Imaging exoplanets with coronagraphic instruments*, Comptes Rendus. Physique, Online first, pp. 1-45. [DOI link](#), [arXiv link](#)
- 3. 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](#), 7 citations
- 4. 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](#), 33 citations
- 5. **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
- 6. **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
- 7. 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
- 8. **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
- 9. **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
- 10. **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](#), 33 citations
- 11. **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](#), 32 citations
- 12. **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](#), 33 citations

OTHER REFEREED PUBLICATIONS

1. Hom, J. ; Patience, J. ; Chen, C. H. et al. *A Uniform Analysis of Debris Disks with the Gemini Planet Imager II: An Investigation of Disk Properties with Radiative Transfer Forward Modeling (accepted in MNRAS)*, arXiv e-prints, [arXiv:2402.00214](#)
2. Worthen, K. ; Chen, C. H. ; Brittain, S. et al. (2024), *Vertical Structure of Gas and Dust in Four Debris Disks (accepted in ApJ)*, arXiv e-prints, [arXiv:2312.09106](#)
3. 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](#)

4. 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](#), 1 citation
5. 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](#)
6. 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](#), 1 citation
7. 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](#), 2 citations
8. 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](#), 34 citations
9. 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](#), 57 citations
10. 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](#), 35 citations
11. 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](#), 4 citations
12. 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](#), 12 citations
13. 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](#), 9 citations
14. 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
15. 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](#), 26 citations
16. 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](#), 75 citations
17. 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](#), 19 citations
18. 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](#), 75 citations
19. 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](#), 9 citations
20. 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](#), 11 citations
21. 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](#), 24 citations

22. 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](#), 36 citations
23. 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](#), 45 citations
24. 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](#), 26 citations
25. 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](#), 29 citations
26. Lebouilleux, 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](#), 18 citations
27. 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
28. 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](#), 29 citations
29. 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](#), 41 citations
30. 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](#), 16 citations
31. 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](#), 70 citations
32. 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
33. 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, 82, 1, [DOI link](#), 230 citations
34. Cousin, A. ; Forni, O. ; Maurice, S. et al. (2011), *Laser induced breakdown spectroscopy library for the Martian environment*, Spectrochimica Acta, 66, 805, [DOI link](#), 75 citations

MAJOR CONFERENCE PROCEEDINGS

1. 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
2. **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
3. 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

4. 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](#), 12 citations
5. **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
6. **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](#), 2 citations
7. 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](#)
8. 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
9. **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](#), 1 citation
10. **Mazoyer, J.** ; Pueyo, L. ; Norman, C. et al. (2015), *Active correction of aperture discontinuities (ACAD) for space telescope pupils: a parametric analysis*, Techniques and Instrumentation for Detection of Exoplanets VII, 9605, 96050M, [DOI link](#), [arXiv link](#), 10 citations
11. 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](#), 18 citations
12. **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
13. **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](#)
14. 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
15. **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
16. 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](#)
17. Baudoz, P. ; **Mazoyer, J.** ; Mas, M. et al. (2012), *Dark hole and planet detection: laboratory results using the self-coherent camera*, Ground-based and Airborne Instrumentation for Astronomy IV, 8446, 84468C, [DOI link](#), 11 citations
18. 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
19. **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
20. 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

OTHER CONFERENCE PROCEEDINGS

1. Goulas, C. ; Vidal, F. ; Galicher, R. et al. (2023), *SAXO+ upgrade : second stage AO system end-to-end numerical simulations* (AO4ELT7 conference proceedings), arXiv e-prints, [arXiv:2310.15765](#)
2. Fowler, J. ; Haffert, S. Y. ; van Kooten, M. A. M. et al. (2023), *Visible extreme adaptive optics on extremely large telescopes: towards detecting oxygen in Proxima Centauri b and analogs*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 12680, 126801U, [DOI link](#)
3. Desai, N. ; König, L. ; Por, E. et al. (2023), *Integrated photonic-based coronagraphic systems for future space telescopes*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 12680, 126801S, [DOI link](#), [arXiv link](#)
4. Cantalloube, F. ; Christiaens, V. ; Cantero, C. et al. (2022), *Exoplanet imaging data challenge, phase II: characterization of exoplanet signals in high-contrast images*, Adaptive Optics Systems VIII, 12185, 1218505, [DOI link](#), [arXiv link](#), 1 citation
5. Boccaletti, A. ; Chauvin, G. ; Wildi, F. et al. (2022), *Upgrading the high contrast imaging facility SPHERE: science drivers and instrument choices*, Ground-based and Airborne Instrumentation for Astronomy IX, 12184, 121841S, [DOI link](#), [arXiv link](#), 1 citation
6. Potier, A. ; Wahhaj, Z. ; Galicher, R. et al. (2022), *Improving VLT/SPHERE without additional hardware: comparing quasi-static correction strategies*, Adaptive Optics Systems VIII, 12185, 1218568, [DOI link](#), [arXiv link](#)
7. Lopez, R. ; Fitzgerald, M. ; Duchene, G. et al. (2022), *The Peculiar Warp of HD 110058's Debris Disk*, American Astronomical Society Meeting #240, 54, 421.01
8. N'Diaye, M. ; Fogarty, K. ; Soummer, R. et al. (2018), *Apodized Pupil Lyot coronagraphs with arbitrary aperture telescopes: novel designs using hybrid focal plane masks*, Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698, 106986A, [DOI link](#), [arXiv link](#), 2 citations
9. Soummer, R. ; Brady, G. R. ; Brooks, K. et al. (2018), *High-contrast imager for complex aperture telescopes (HiCAT): 5. first results with segmented-aperture coronagraph and wavefront control*, Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698, 106981O, [DOI link](#), [arXiv link](#), 6 citations
10. 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
11. St. Laurent, K. ; Fogarty, K. ; Zimmerman, N. T. et al. (2018), *Apodized pupil Lyot coronagraphs designs for future segmented space telescopes*, Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698, 106982W, [DOI link](#), [arXiv link](#), 2 citations
12. 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
13. Leboulleux, L. ; Pueyo, L. ; Sauvage, J. -F. et al. (2018), *Sensitivity analysis for high-contrast imaging with segmented space telescopes*, Space Telescopes and Instrumentation 2018: Optical, Infrared, and Millimeter Wave, 10698, 106986H, [DOI link](#), 3 citations
14. Egron, S. ; Soummer, R. ; Lajoie, C. -P. et al. (2017), *James Webb Space Telescope optical simulation testbed IV: linear control alignment of the primary segmented mirror*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10398, 1039811, [DOI link](#)
15. Pueyo, L. ; Zimmerman, N. ; Bolcar, M. et al. (2017), *The LUVOIR architecture "A" coronagraph instrument*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10398, 103980F, [DOI link](#), 10 citations
16. Leboulleux, L. ; N'Diaye, M. ; Riggs, A. J. E. et al. (2016), *High-contrast imager for Complex Aperture Telescopes (HiCAT). 4. Status and wavefront control development*, Space Telescopes and Instrumentation 2016: Optical, Infrared, and Millimeter Wave, 9904, 99043C, [DOI link](#), 6 citations

17. Galicher, R. ; Baudoz, P. ; Delorme, J. R. et al. (2014), *High contrast imaging on the THD bench: progress and upgrades*, Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, 9143, 91435A, [DOI link](#), 3 citations
18. Delorme, J. R. ; Galicher, R. ; Baudoz, P. et al. (2014), *High-contrast imaging in wide spectral band with a self-coherent camera and achromatic coronagraphs*, Advances in Optical and Mechanical Technologies for Telescopes and Instrumentation, 9151, 91515Q, [DOI link](#), 1 citation
19. Galicher, R. ; Delorme, J. R. ; Baudoz, P. et al. (2013), *Focal Plane Wavefront Sensing with a self-coherent camera*, Proceedings of the Third AO4ELT Conference, 123, [DOI link](#)

WHITE PAPERS (SELECTED)

- Boccaletti, A. et al. (2020), *SPHERE+: Imaging young Jupiters down to the snowline*, arXiv e-prints, [arXiv:2003.05714](#)
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