

# 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>LESIA/Paris Observatory</b> (France)	Starting 2020
Sagan Fellow – <b>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>LESIA/Paris Observatory</b> (France)	2011 - 2014

## 2 EDUCATION

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

## 3 GRANTS & AWARDS

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<b>Carl Sagan Fellowship</b> ( <b>NASA Hubble Fellowship Program</b> ) – 3 yrs	2018
Cover of <b>Astronomy &amp; Astrophysics Journal</b> ( <b>Volume 564</b> )	2014
<b>Outstanding Presentation Award</b> (CNES fellow symposium JC <sup>2</sup> )	2013
<b>CNES Doctoral Research Fellowship</b> ( <b>French space agency</b> ) – 3 yrs	2011
<b>Ecole Polytechnique Scholarship</b> – 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.

**Kidi'Science:** Contributor for this children science blog.

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

## 5 PROFESSIONAL ACTIVITIES & SERVICE

### Conference and Workshop Organizer:

- 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](#)
- SOC: **High Contrast Imaging from Space** (Baltimore, MD, Nov. 2016) - [website](#)
- LOC: **La très haute dynamique** workshop (Paris, FR, 2012)

### Other Services:

- **Hubble Telescope Allocation Committee** panel support (2016).



- NASA Exoplanet Exploration Program Analysis Group (ExoPAG) member of the **Study Analysis Groups (SAGs) #19** (Theory and Rigorous Contrast Metrics) since 2016 (see Jensen-Clem et al. 2018).
- Organization of the **“Exoplanet Star and Planet Formation” (ESPF)** seminar at STScI each week (2016-2018) - [website](#)
- Development of the **Paris THD optical testbed website** in August 2014.
- IAU member since 2019
- **Referee** for publications in the *AJ*, *A&A*, *MNRAS*, *PASP* and *JATIS*.

## 6 TEACHING & MENTORING

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### PhD supervising:

- **Lucie Leboulleux**, in co-direction between STScI & ONERA, France (Leboulleux, N'Diaye, Mazoyer et al. 2017 SPIE ; Leboulleux et al. 2018 ; Leboulleux et al. 2018 SPIE).
- **Kevin Fogarty**, PhD at JHU and 1 year postdoc at STScI (Fogarty, Pueyo, Mazoyer et al, 2018 AJ ; Fogarty, Mazoyer et al, 2018 SPIE ; Fogarty, Pueyo, Mazoyer et al, 2017 SPIE). Now Caltech Prize Postdoctoral Fellowship in Experimental Physics or Astrophysics.

### Teaching assistant:

Université Paris Diderot – Paris 7	Electronics	<b>2013 - 2014</b>
Université Paris Descartes – Paris 5	Fluid dynamics	<b>2011 - 2012</b>

**La Main à la Pâte:** **2007 - 2008**

- I taught science during 8 months (30h/week) in primary schools in underprivileged neighborhoods (Perpignan, France). **La Main à la pâte** was founded by Nobel Prize winner G. Charpak, astronomer P. Léna and physicist Y. Quéré, of the French Academy of Sciences, to improve the quality of science and technology teaching in primary and middle school.

# PUBLICATIONS

## 1 MAJOR REFEREED PUBLICATIONS

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9. **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, [ADS Link](#), 7 citations
8. **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, [ADS Link](#), 6 citations
7. Fogarty, K. ; Pueyo, L. ; **Mazoyer, J.** et al. (2017), *Polynomial Apodizers for Centrally Obscured Vortex Coronagraphs*, The Astronomical Journal, 154, 240, [ADS Link](#), 6 citations
6. **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, [ADS Link](#), 7 citations
5. **Mazoyer, J.** ; Boccaletti, A. ; Choquet, É. et al. (2016), *A Symmetric Inner Cavity in the HD 141569A Circumstellar Disk*, The Astrophysical Journal, 818, 150, [ADS Link](#), 9 citations
4. **Mazoyer, J.** ; Boccaletti, A. ; Augereau, J. -C. et al. (2014), *Is the HD 15115 inner disk really asymmetrical?*, Astronomy and Astrophysics, 569, A29, [ADS Link](#), 28 citations
3. **Mazoyer, J.** (2014), *High-Contrast Direct Imaging Of Exoplanets And Circumstellar Disks: From The Self-Coherent Camera To Nici Data Analysis*, Ph.D. Thesis, [ADS Link](#), 2 citations
2. **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, [ADS Link](#), 23 citations
1. **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, [ADS Link](#), 23 citations

## 2 OTHER REFEREED PUBLICATIONS

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15. Bhowmik, T. et al. (2019), *Spatially resolved spectroscopy of the debris disk HD 32297. Further evidence of small dust grains*, Astronomy and Astrophysics, 630, A85, [ADS Link](#), 1 citation
14. Ren, B. et al. (2019), *An Exo-Kuiper Belt with an Extended Halo around HD 191089 in Scattered Light*, The Astrophysical Journal, 882, 64, [ADS Link](#)
13. Stark, C. C. et al. (2019), *ExoEarth yield landscape for future direct imaging space telescopes*, Journal of Astronomical Telescopes, Instruments, and Systems, 5, 024009, [ADS Link](#)
12. Engler, N. et al. (2019), *Investigating the presence of two belts in the HD 15115 system*, Astronomy and Astrophysics, 622, A192, [ADS Link](#), 5 citations
11. Esposito, T. M. 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, [ADS Link](#), 2 citations

10. Leboulleux, L. 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, [ADS Link](#), 2 citations
9. Poteet, C. A. 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, [ADS Link](#), 3 citations
8. Jensen-Clem, R. et al. (2018), *A New Standard for Assessing the Performance of High Contrast Imaging Systems*, The Astronomical Journal, 155, 19, [ADS Link](#), 12 citations
7. Fogarty, K. et al. (2017), *Polynomial Apodizers for Centrally Obscured Vortex Coronagraphs*, The Astronomical Journal, 154, 240, [ADS Link](#), 6 citations
6. Perrot, C. 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, [ADS Link](#), 18 citations
5. Delorme, J. R. et al. (2016), *Focal plane wavefront sensor achromatization: The multireference self-coherent camera*, Astronomy and Astrophysics, 588, A136, [ADS Link](#), 9 citations
4. Choquet, É. et al. (2016), *First Images of Debris Disks around TWA 7, TWA 25, HD 35650, and HD 377*, The Astrophysical Journal, 817, L2, [ADS Link](#), 39 citations
3. Debes, J. H. 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, [ADS Link](#), 9 citations
2. Wiens, R. C. et al. (2013), *Pre-flight calibration and initial data processing for the Chem-Cam laser-induced breakdown spectroscopy instrument on the Mars Science Laboratory rover*, Spectrochimica Acta, 82, 1, [ADS Link](#), 117 citations
1. Cousin, A. et al. (2011), *Laser induced breakdown spectroscopy library for the Martian environment*, Spectrochimica Acta, 66, 805, [ADS Link](#), 39 citations

### 3 MAJOR CONFERENCE PROCEEDINGS

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19. 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, [ADS Link](#)
18. 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, [ADS Link](#)
17. **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, [ADS Link](#), 2 citations
16. **Mazoyer, J.** ; Pueyo, L. (2017), *Fundamental limits to high-contrast wavefront control*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10400, 1040014, [ADS Link](#), 1 citation

15. 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) tested*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10562, 105622Z, [ADS Link](#)
14. 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, [ADS Link](#), 2 citations
13. **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, [ADS Link](#)
12. **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, [ADS Link](#), 8 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, [ADS Link](#), 7 citations
10. **Mazoyer, J.** ; Boccaletti, A. ; Augereau, J. -C. et al. (2014), *Is the HD 15115 circumstellar disk really asymmetrical?*, Thirty years of Beta Pic and Debris Disks Studies, 47, [ADS Link](#)
9. **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, [ADS Link](#), 1 citation
8. **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, [ADS Link](#)
7. Baudoz, P. ; **Mazoyer, J.** ; Galicher, R. (2013), *Laboratory tests of planet signal extraction in high contrast images*, Proceedings of the Third AO4ELT Conference, 109, [ADS Link](#), 1 citation
6. **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, [ADS Link](#), 1 citation
5. 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, [ADS Link](#)
4. 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, [ADS Link](#), 8 citations
3. 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, [ADS Link](#), 4 citations
2. **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, [ADS Link](#), 2 citations



1. Gasnault, O. ; **Mazoyer, J.** ; Cousin, A. et al. (2012), *Deciphering Sample and Atmospheric Oxygen Contents with ChemCam on Mars*, Lunar and Planetary Science Conference, 2888, [ADS Link](#), 1 citation

#### 4 OTHER CONFERENCE PROCEEDINGS

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22. Fogarty, 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, [ADS Link](#)
21. Ruane, G. 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, [ADS Link](#)
20. N'Diaye, M. 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, [ADS Link](#)
19. Soummer, R. 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, [ADS Link](#)
18. Snik, F. 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, [ADS Link](#)
17. St. Laurent, K. 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, [ADS Link](#)
16. Jovanovic, N. 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, [ADS Link](#), 2 citations
15. Lebouilleux, L. 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, [ADS Link](#)
14. Lebouilleux, L. 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, [ADS Link](#)
13. Fogarty, K. 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, [ADS Link](#), 2 citations
12. Egron, S. 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, [ADS Link](#)

11. Pueyo, L. et al. (2017), *The LUVOIR architecture "A" coronagraph instrument*, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 10398, 103980F, [ADS Link](#), 5 citations
10. Leboulleux, L. 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, [ADS Link](#)
9. N'Diaye, M. 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, [ADS Link](#), 7 citations
8. Galicher, 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, [ADS Link](#), 1 citation
7. Delorme, J. R. 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, [ADS Link](#), 1 citation
6. Galicher, R. et al. (2013), *Focal Plane Wavefront Sensing with a self-coherent camera*, Proceedings of the Third AO4ELT Conference, 123, [ADS Link](#)
5. Baudoz, P. et al. (2013), *Laboratory tests of planet signal extraction in high contrast images*, Proceedings of the Third AO4ELT Conference, 109, [ADS Link](#), 1 citation
4. Galicher, R. et al. (2013), *High-contrast imaging with a self-coherent camera*, Techniques and Instrumentation for Detection of Exoplanets VI, 8864, 88640M, [ADS Link](#)
3. Baudoz, P. 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, [ADS Link](#), 8 citations
2. Mas, M. et al. (2012), *Experimental results on wavefront correction using the self-coherent camera*, Ground-based and Airborne Instrumentation for Astronomy IV, 8446, 844689, [ADS Link](#), 4 citations
1. Gasnault, O. et al. (2012), *Deciphering Sample and Atmospheric Oxygen Contents with ChemCam on Mars*, Lunar and Planetary Science Conference, 2888, [ADS Link](#), 1 citation

## 5 ASTRO2020 DECADAL SURVEY

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### Mission Concept Reports

- The LUVOIR Team (2019) *The LUVOIR Mission Concept Study Final Report* (Additional Contributing Scientist), [NASA GSFC Link](#)
- HabEx Study Team (2019) *The HabEx Mission Concept Study Final Report* (Additional Contributing Scientist), [NASA JPL Link](#)

### Astro2020 White Papers

6. **Mazoyer, J.** et al. (2019), *High-Contrast Testbeds for Future Space-Based Direct Imaging Exoplanet Missions*, Bulletin of the American Astronomical Society, 51, 101, [ADS Link](#)



5. Pueyo, L. et al. (2019), *Wavefront Sensing and Control technologies for Exo-Earth imaging*, Bulletin of the American Astronomical Society, 51, 215, [ADS Link](#)
4. Shaklan, S. et al. (2019), *Status of Space-based Segmented-Aperture Coronagraphs for Characterizing Exo-Earths Around Sun-Like Stars*, Bulletin of the American Astronomical Society, 51, 211, [ADS Link](#)
3. Chen, C. et al. (2019), *Debris Disk Composition: A Diagnostic Tool for Planet Formation and Migration*, Bulletin of the American Astronomical Society, 51, 342, [ADS Link](#)
2. Debes, J. et al. (2019), *Cold Debris Disks as Strategic Targets for the 2020s*, Bulletin of the American Astronomical Society, 51, 566, [ADS Link](#)
1. Stark, C. et al. (2019), *Optimal Architectures and Survey Designs for Maximizing the Yields of Direct-Imaging Exoplanet Missions*, Bulletin of the American Astronomical Society, 51, 511, [ADS Link](#)

# PRESENTATIONS

## 1 INVITED PRESENTATIONS

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7. “Wavefront control and sensing for the direct imaging of exoplanets”, JPL seminar, Pasadena, FR **Dec. 2018**
6. “High contrast imaging: from active correction to observation of circumstellar debris disks”, IPAG, Grenoble, FR **Mar. 2018**
5. “High contrast imaging: active correction of aperture discontinuities”, Carnegie DTM Astronomy Seminar, Washington, DC, USA **Feb. 2018**
4. “High contrast imaging: active correction of aperture discontinuities”, STScI/JHU CoolSci Talk Series, Baltimore, MD, USA **Feb. 2017**
3. “High contrast imaging: from active correction to observation of circumstellar debris disks”, IRAP seminar, Toulouse FR **Mar. 2017**
2. “Correction of aperture discontinuities for the direct imaging of exoplanets and circumstellar disks”, CRAL séminar, Lyon, FR **Sep. 2016**
1. “Active Correction of Aperture Discontinuities (ACAD) for Space Telescope Pupils: A parametrical analysis”, Vortex coronagraph workshop 2, Caltech, Pasadena, CA, US **Jul. 2016**

## 2 WORKSHOPS AND CONFERENCES

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17. “The surprising scattering phase function of the HR 4796 debris disk”, AAS conference, Seattle, WA, US **Jan. 2019**
16. “Current Limitations and Perspectives for Direct Imaging Instrumentation for Future Space-Based Telescopes”, Sagan/Michelson Fellows Symposium, Pasadena, CA, US **Nov. 2018**
15. “High-Contrast Imaging of the HR 4796 Debris Disk with the Gemini Planet Imager”, NCAD7 Workshop, Baltimore, MD, US **Sep. 2018**
14. “Forward modeling techniques for spectra retrieval of circumstellar debris disks”, AAS conference, Washington, DC, US **Jan. 2018**
13. “Beam shaping coronagraphs”, OOC workshop, Leiden, NL **Sep. 2017**
12. “The HiCAT testbed”, OOC workshop, Leiden, NL **Sep. 2017**
11. “Capabilities of ACAD-OSM, an active method for the correction of aperture discontinuities”, SPIE Conference, San Diego, CA, US **Aug. 2017**
10. “Fundamental limits to high-contrast wavefront control”, SPIE Conference, San Diego, CA, US **Aug. 2017**
9. “A new active method to correct for the effects of complex apertures on coronagraph performance”, AAS conference, Grapevine, TX **Jan. 2017**

8. “Correcting for aperture discontinuities with deformable mirrors for futur space telescopes”, High Contrast Imaging in Space workshop, STScI, Baltimore, MD **Nov. 2016**
7. “Deep inside circumstellar disks investigating the NICI archive”, NCAD 6 conference, Carnegie DTM, Washington DC, US **Jul. 2016**
6. “Active correction of aperture discontinuities (ACAD) for space telescope pupils: a parametric analysis”. SPIE Conference, Techniques and Instrumentation for Detection of Exoplanets VII. San Diego, CA, US. **Aug. 2015.**
5. “THD bench : description and latest results”. Coronagraphs and Wavefront Control Workshop. Leiden, Netherlands, **Oct. 2014.**
4. “Direct detection of exoplanets in polychromatic light with a Self-coherent camera”. SPIE Conference, Techniques and Instrumentation for Detection of Exoplanets VI. San Diego, CA, US. **Aug. 2013.**
3. “Deformable mirror analysis for direct imagery of exoplanets”. Journées recherche et industrie de l’optique adaptative 6. Villetaneuse, France. **Jul. 2013.**
2. “Self-Coherent Camera : principe”, Workshop “Très haute Dynamique”. Meudon, France. **Sept. 2012.**
1. “La Self-Coherent Camera : estimation de front d’onde en plan focal pour la détection d’exoplanètes en imagerie directe”. Journées recherche et industrie de l’optique adaptative 5. Marseille, France. **Jul. 2012.**

### 3 SEMINARS

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15. “High-contrast imaging of exoplanets with future large ground- and space-based telescopes : current limitations and perspectives”, IPAC, Caltech, Pasadena, CA **Apr. 2019**
14. “High contrast imaging: from active correction to observation of circumstellar debris disks”, LESIA, Paris, FR **Jan. 2019**
13. NASA’s Goddard Space Flight Center seminar, MD, US. “A new active method to correct for the effects of complex apertures on coronagraph performance” **Jan. 2017**
12. ESO TMT seminar, Santiago, CL. “A new active method to correct for the effects of complex apertures on coronagraph performance” **Nov. 2016**
11. Séminaire de l’OCA, Nice, FR. “Correction of aperture discontinuities for the direct imaging of exoplanets and circumstellar disks” **Aug. 2016**
10. Space Telescope Science Institute post-doc Jamboree, MD, US. “Deep inside circumstellar disks: high-contrast instrumental techniques and archival data analysis” **Feb. 2016.**
9. Wine & Cheese seminar, Johns Hopkins University, MD, US. “Deep inside circumstellar disks: high-contrast instrumental techniques and archival data analysis” **Apr. 2015.**
8. LOOM Seminar, LAM, Marseille, France. “Deep inside circumstellar disks: high contrast instrumental techniques and data analysis using NICI”. **Mar. 2015.**

7. STScI science coffee seminar, Baltimore, MD, US. “Deep inside circumstellar disks with the GEMINI/NICI coronagraphic instrument” **Jan. 2015**.
6. Astrium optical group seminar, Toulouse, France. “Self Coherent Camera and THD bench” **Oct. 2013**.
5. Séminaire Haute Résolution angulaire, LESIA, Obs. de Paris, France. “The self-coherent camera: speckle nulling in polychromatic light for the direct detection of exoplanets” **Oct. 2013**.
4. CNES optical group seminar, Toulouse, France. “Self Coherent Camera and THD bench” **Oct. 2013**.
3. Journées des jeunes chercheurs du CNES (JC2), Toulouse, France. “La Self-Coherent Camera : imagerie directe par coronographie pour la détection et l’analyse spectrale d’exoplanètes”, **Awarded best presentation, Oct. 2013**.
2. Journées des thèses du LESIA, Obs de Paris, France. Deux présentations, en **Mar. 2012** et **Apr. 2013**.
1. Conférence “Elbereth” des doctorants en astronomie et astrophysique d’Île-de-France, IAP, Paris, France. Three présentations en **Dec. 2011, 2012 et 2013**.

## 4 PUBLIC PRESENTATIONS

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- “Imagerie directe d’exoplanètes avec les futurs grands télescopes au sol et spatiaux : limitations actuelles et perspectives”. French class to Caltech students **Apr. 2019**.
- “Extremely Large Telescopes : des cathédrales pour l’astronomie”. CERN, Suisse **Aug. 2014**.
- “Des œufs dans l’espace”. Palais de la découverte, Paris, France **May 2016**.
- “Excréments dans l’espace”. Palais de la découverte, Paris, France **May 2017**.