

# Johan MAZOYER

Research Interests: Optical Instrumentation, Active Correction for Coronagraphy, Imaging and Characterization of Circumstellar Environments

## 1 RESEARCH POSITIONS

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**Carl Sagan Postdoctoral Fellow – Jet Propulsion Laboratory** Pasadena, CA  
High contrast imaging on the Decadal Survey Testbed **2018 - Present**

**Postdoctoral Researcher – Johns Hopkins University** Baltimore, MD  
Gemini planet imager collaboration: debris disk analysis **2016 - 2018**

**Postdoctoral Researcher – Space Telescope Science Institute** Baltimore, MD  
Active correction for coronagraphy **2014 - 2016**

**CNES Graduate Student Fellow – LESIA/Paris Observatory** Paris, Fr  
Advisors: Pierre Baudoz & Gérard Rousset **2011 - 2014**

**Visiting Research Student – Los Alamos National Laboratory** Los Alamos, NM  
MSL/ChemCam Collaboration (Roger Wiens) **Summer 2011**

**Visiting Research Student – IRAP** Toulouse, Fr  
MSL/ChemCam Collaboration (Olivier Gasnault & Sylvestre Maurice) **Spring 2011**

## 2 EDUCATION

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**PhD in Astronomy & Astrophysics – Université Paris Diderot** 2014  
*High-contrast direct imaging of exoplanets and circumstellar disks: from the SCC to NICI*

**Master in Astronomy & Astrophysics – Observatoire Midi-Pyrénées** 2011

**Master in Space engineering & Imaging techniques – ISAE Supaero** 2011

**Bachelor in Physics & Computer Engineering – Ecole polytechnique** 2010

## 3 GRANTS & AWARDS

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**Carl Sagan Fellowship (NASA Hubble Fellowship Program) - \$300K/3 yrs** 2018

Cover of **Astronomy & Astrophysics (Volume 564)** 2014

**Outstanding Presentation Award (CNES fellow symposium JC<sup>2</sup>)** 2013

**CNES Doctoral Research Fellowship (French space agency) - \$66K/3 yrs** 2011

**Ecole Polytechnique Scholarship - \$48K/4 yrs** 2007

## 4 POPULAR SCIENCE



**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:** Writer for this children science blog.

**Public conferences:** CERN (Geneva) et Palais de la découverte (Paris)

## 5 SERVICE TO THE COMMUNITY

### 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:

- Member of the **WFIRST Science Investigation Team** (SIT) for disk science since 2017.
- **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.
- **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.
- **Sylvain Egron**, in co-direction between STScI & ONERA, France (Egron et al. 2017 SPIE)

### Teaching assistant:

Université Paris Diderot – Paris 7	Electronics	2013 - 2014
Université Paris Descartes – Paris 5	Fluid dynamics	2011 - 2012

**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 & PRESENTATIONS

## 1 REFEREED PUBLICATIONS IN FIRST AUTHOR

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7. **Mazoyer, J.**, Pueyo, L., N'Diaye, M., Fogarty, K., Zimmerman, N., Soummer, R., Shaklan, S. and Norman, C., "Active Correction of Aperture Discontinuities-Optimized Stroke Minimization. II. Optimization for Future Missions," *The Astronomical Journal* 155, 8, 19 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018AJ....155....8M>
6. **Mazoyer, J.**, Pueyo, L., N'Diaye, M., Fogarty, K., Zimmerman, N., Leboulleux, L., St. Laurent, K. E., Soummer, R., Shaklan, S. and Norman, C., "Active Correction of Aperture Discontinuities-Optimized Stroke Minimization. I. A New Adaptive Interaction Matrix Algorithm," *The Astronomical Journal* 155, 7, 13 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018AJ....155....7M>
5. **Mazoyer, J.**, Boccaletti, A., Choquet, É., Perrin, M. D., Pueyo, L., Augereau, J.-C., Lagrange, A.-M., Debes, J. and Wolff, S. G., "A Symmetric Inner Cavity in the HD 141569A Circumstellar Disk," *The Astrophysical Journal* 818(2), 150, 8 pages (2016).  
Link: <http://adsabs.harvard.edu/abs/2016ApJ...818..150M>
4. **Mazoyer, J.**, Pueyo, L., Norman, C., N'Diaye, M., van der Marel, R. P. and Soummer, R., "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, 8 pp (2016).  
Link: <http://adsabs.harvard.edu/abs/2016JATIS...2a1008M>
3. **Mazoyer, J.**, Boccaletti, A., Augereau, J.-C., Lagrange, A.-M., Galicher, R. and Baudoz, P., "Is the HD 15115 inner disk really asymmetrical?," *Astronomy and Astrophysics* 569, A29, 9 pages (2014).  
Link: <http://adsabs.harvard.edu/abs/2014A%26A...569A..29M>
2. **Mazoyer, J.**, Baudoz, P., Galicher, R. and Rousset, G., "High-contrast imaging in polychromatic light with the self-coherent camera," *Astronomy and Astrophysics* 564, L1, 4 pages (2014).  
**Made the front cover of *Astronomy & Astrophysics* in April 2014**  
Link: <http://adsabs.harvard.edu/abs/2014A%26A...564L...1M>
1. **Mazoyer, J.**, Baudoz, P., Galicher, R., Mas, M. and Rousset, G., "Estimation and correction of wavefront aberrations using the self-coherent camera: laboratory results," *Astronomy and Astrophysics* 557, 9, 13 pages (2013).  
Link: <http://adsabs.harvard.edu/abs/2013A%26A...557A...9M>

## 2 OTHER REFEREED PUBLICATIONS

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12. Engler, N., Boccaletti, A., Schmid, H.M., Milli, J., Augereau, J.-C., **Mazoyer, J.**, Maire, A.-L., Henning, T. et al., Accepted in Astronomy and Astrophysics (2018).  
Link: <https://arxiv.org/abs/1812.02750>
11. Leboulleux, L., Sauvage, J.-F., Pueyo, L., Fusco, T., Soummer, R., **Mazoyer, J.**, et al. , “Pair-based Analytical model for Segmented Telescopes Imaging from Space (PASTIS) for sensitivity analysis,” Journal of Astronomical Telescopes, Instruments, and Systems, 4(3), 035002, 14 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018JATIS...4c5002L>
10. Esposito et al. “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, 2, 16 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018AJ....156...47E>
9. Poteet, C. A., Chen, C. H., Hines, D. C., Perrin, M. D., Debes, J. H., Pueyo, L., Schneider, G., **Mazoyer, J.**, and Kolokolova, L. “Space-Based Coronagraphic Imaging Polarimetry of the TW Hydrae Disk: Shedding New Light on Self-Shadowing Effects,” The Astronomical Journal 860, 115, 14 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018ApJ...860..115P>
8. Jensen-Clem, R., Mawet, D., Gomez Gonzalez, C. A., Absil, O., Belikov, R., Currie, T., Kenworthy, M. A., Marois, C., **Mazoyer, J.**, Ruane, G., Tanner, A. and Cantalloube, F., “A New Standard for Assessing the Performance of High Contrast Imaging Systems,” The Astronomical Journal 155, 19, 8 pages (2018).  
Link: <http://adsabs.harvard.edu/abs/2018AJ....155...19J>
7. Fogarty, K., Pueyo, L., **Mazoyer, J.** and N’Diaye, M., “Polynomial Apodizers for Centrally Obscured Vortex Coronagraphs,” The Astronomical Journal 154, 240, 18 pages (2017).  
Link: <http://adsabs.harvard.edu/abs/2017AJ....154..240F>
6. Perrot, C., Boccaletti, A., Pantin, E., Augereau, J.-C., Lagrange, A.-M., Galicher, R., Maire, A.-L., **Mazoyer, J.** et al., “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, 9 pages (2016).  
Link: <http://adsabs.harvard.edu/abs/2016A%26A...590L...7P>
5. Delorme, J. R., Galicher, R., Baudoz, P., Rousset, G., **Mazoyer, J.** and Dupuis, O., “Focal plane wavefront sensor achromatization: The multireference self-coherent camera,” Astronomy and Astrophysics 588, A136, 14 pages (2016).  
Link: <http://adsabs.harvard.edu/abs/2016A%26A...588A.136D>
4. Debes, J. H., Ygouf, M., Choquet, E., Hines, D. C., Perrin, M. D., Golimowski, D. A., Lajoie, C.-P., **Mazoyer, J.**, Pueyo, L., Soummer, R. and van der Marel, R., “WFIRST-AFTA coronagraphic operations: lessons learned from the HST and the

JWST,” *Journal of Astronomical Telescopes, Instruments, and Systems* 2(1), 011010, 14 pages (2016).

Link: <http://adsabs.harvard.edu/abs/2016JATIS...2a1010D>

3. Choquet, É., Perrin, M. D., Chen, C. H., Soummer, R., Pueyo, L., Hagan, J. B., Gofas-Salas, E., Rajan, A., Golimowski, D. A., Hines, D. C., Schneider, G., **Mazoyer, J.**, et al., “First Images of Debris Disks around TWA 7, TWA 25, HD 35650, and HD 377,” *The Astrophysical Journal Letters* 817, L2, 6 pages (2016).

Link: <http://adsabs.harvard.edu/abs/2016ApJ...817L...2C>

2. Wiens, R. C., Maurice, S., Lasue, J., Forni, O., Anderson, R. B., Clegg, S., Bender, S., Blaney, D., Barraclough, B. L., Cousin, A., Deflores, L., Delapp, D., Dyar, M. D., Fabre, C., Gasnault, O., Lanza, N., **Mazoyer, J.**, et al., “Pre-flight calibration and initial data processing for the ChemCam laser-induced breakdown spectroscopy instrument on the Mar. Science Laboratory rover,” *Spectrochimica Acta Part B: Atomic Spectroscopy* 82, 1–27, 27 pages (2013).

Link: <http://adsabs.harvard.edu/abs/2013AcSpe..82...1W>

1. Cousin, A., Forni, O., Maurice, S., Gasnault, O., Fabre, C., Sautter, V., Wiens, R. C. and **Mazoyer, J.**, “Laser induced breakdown spectroscopy library for the Martian environment,” *Spectrochimica Acta* 66, 805–814, 10 pages (2011).

Link: <http://adsabs.harvard.edu/abs/2011AcSpe..66..805C>

### 3 CONFERENCE PROCEEDINGS IN FIRST AUTHOR

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8. **Mazoyer, J.** and Pueyo, L., “Fundamental limits to high-contrast wavefront control,” *SPIE Proceedings* 10400, 1040014, 18 pages (2017).

Liens : <http://adsabs.harvard.edu/abs/2017SPIE10400E..14M>

7. **Mazoyer, J.**, Pueyo, L., N’Diaye et al., “Capabilities of ACAD-OSM, an active method for the correction of aperture discontinuities,” *SPIE Proceedings* 10400, 104000G, 13 pages (2017).

Liens : <http://adsabs.harvard.edu/abs/2017SPIE10400E..14M>

6. **Mazoyer, J.**, Pueyo, L., N’Diaye, et al., “Correcting for the effects of pupil discontinuities with the ACAD method,” *SPIE Proceedings* 9904, 99044T, 12 pages (2016).

Link: <http://adsabs.harvard.edu/abs/2016SPIE.9904E..4TM>

5. **Mazoyer, J.**, Pueyo, L., Norman, et al., “Active correction of aperture discontinuities (ACAD) for space telescope pupils: a parametric analysis,” *SPIE Proceedings* 9605, 96050M, 13 pages (2015).

Link: <http://adsabs.harvard.edu/abs/2015SPIE.9605E..0MM>

4. **Mazoyer, J.**, Galicher, R., Baudoz, P., et al., “Deformable mirror interferometric analysis for the direct imagery of exoplanets,” *SPIE Proceedings* 9148, 914846, 11 pages (2014).

Link: <http://adsabs.harvard.edu/abs/2014SPIE.9148E..46M>

3. **Mazoyer, J.**, Baudoz, P., Galicher, R. and Rousset, G., “Direct detection of exoplanets in polychromatic light with a Self-coherent camera,” AO4ELT3 Proceedings 97, 8 pages (2013).  
Link: <http://adsabs.harvard.edu/abs/2013aoel.confE..97M>
2. **Mazoyer, J.**, Galicher, R., Baudoz, P. and Rousset, G., “Speckle correction in polychromatic light with the self-coherent camera for the direct detection of exoplanets,” SPIE Proceedings 8864, 88640N, 9 pages (2013).  
Link: <http://adsabs.harvard.edu/abs/2013SPIE.8864E..0NM>
1. **Mazoyer, J.**, Baudoz, P., Mas, M., et al., “Experimental parametric study of the self-coherent camera,” SPIE Proceedings 8442, 844250, 10 pages (2012).  
Link: <http://adsabs.harvard.edu/abs/2012SPIE.8442E..50M>

## 4 OTHER CONFERENCE PROCEEDINGS

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22. Fogarty, K., **Mazoyer, J.**, Laurent, K. S., et al., “Optimal deformable mirror and pupil apodization combinations for apodized pupil Lyot coronagraphs with obstructed pupils,” SPIE Proceedings 106981J, 19 pages (2018).
21. Ruane, G., Riggs, A., **Mazoyer, J.**, et al., “Review of high-contrast imaging systems for current and future ground- and space-based telescopes I: coronagraph design methods and optical performance metrics,” SPIE Proceedings 106982S, 20 pages (2018).
20. Jovanovic, N., Absil, O., Baudoz, P., et al., “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,” SPIE Proceedings 107031U, 19 pages (2018).
19. Laurent, K. S., Fogarty, K., Zimmerman, N. T., et al., “Apodized pupil Lyot coronagraphs designs for future segmented space telescopes,” SPIE Proceedings 106982W, 18 pages (2018).
18. Leboulleux, L., Pueyo, L., Sauvage, “Sensitivity analysis for high-contrast imaging with segmented space telescopes,” SPIE Proceedings 106986H, 16 pages (2018).
17. N’Diaye, M., Fogarty, K., Soummer, et al., “Apodized Pupil Lyot coronagraphs with arbitrary aperture telescopes: novel designs using hybrid focal plane masks,” SPIE Proceedings 106986A, 11 pages (2018).
16. Snik, F., Absil, O., Baudoz, P., et al., “Review of high-contrast imaging systems for current and future ground-based and space-based telescopes III: technology opportunities and pathways,” SPIE Proceedings 107062L, 16 pages (2018).
15. Soummer, R., Brady, G. R., Brooks, K., et al., “High-contrast imager for complex aperture telescopes (HiCAT): 5. first results with segmented-aperture coronagraph and wavefront control,” SPIE Proceedings 106981O, 16 pages (2018).

14. Pueyo, L., Zimmerman, N., Bolcar, et al., “The LUVOIR architecture ‘A’ coronagraph instrument,” SPIE Proceedings 103980F, 20 pages (2017).
13. Fogarty, K., Pueyo, L., **Mazoyer, J.** and N’Diaye, M., “Polynomial apodized vortex coronagraphs for obscured telescope pupils,” SPIE Proceedings 104000T, International Society for Optics and Photonics, 17 pages (2017).
12. Egron, S., Soummer, R., Lajoie, C.-P., et al., “James Webb Space Telescope optical simulation testbed IV: linear control alignment of the primary segmented mirror,” SPIE Proceedings 1039811, 9 pages (2017).
11. Leboulleux, L., N’Diaye, M., **Mazoyer, J.**, et al. “Comparison of wavefront control algorithms and first results on the high-contrast imager for complex aperture telescopes (hicat) testbed,” SPIE Proceedings 105622Z, ICSO (2017).
10. Leboulleux, L., N’Diaye, M., Riggs, A. J. E., et al., “High-contrast imager for Complex Aperture Telescopes (HiCAT). 4. Status and wavefront control development,” SPIE Proceedings 99043C, 13 pages (2016).
9. N’Diaye, M., **Mazoyer, J.**, Choquet, É., et al., “High-contrast imager for complex aperture telescopes (HiCAT): 3. first lab results with wavefront control,” SPIE Proceedings 96050I, 12 pages (2015).
8. Galicher, R., Baudoz, P., Delorme, J. R. et al., “High contrast imaging on the THD bench: progress and upgrades,” SPIE Proceedings 91435A, 11 pages (2014).
7. Delorme, J. R., Galicher, R., Baudoz, et al., “High-contrast imaging in wide spectral band with a self-coherent camera and achromatic coronagraphs,” SPIE Proceedings 91515Q, 12 pages (2014).
6. Galicher, R., **Mazoyer, J.**, Baudoz, P. and Rousset, G., “High-contrast imaging with a self-coherent camera,” SPIE Proceedings 88640M, 11 pages (2013).
5. Galicher, R., Delorme, J. R., Baudoz, P. and **Mazoyer, J.**, “Focal Plane Wavefront Sensing with a self-coherent camera,” AO4ELT3 Proceedings 123, 7 pages (2013).
4. Baudoz, P., **Mazoyer, J.** and Galicher, R., “Laboratory tests of planet signal extraction in high contrast images,” AO4ELT3 Proceedings 109, 8 pages (2013).
3. Mas, M., Baudoz, P., **Mazoyer, J.**, et al., “Experimental results on wavefront correction using the self-coherent camera,” SPIE Proceedings 844689, 12 pages (2012).
2. Baudoz, P., **Mazoyer, J.**, Mas, M., et al., “Dark hole and planet detection: laboratory results using the self-coherent camera,” SPIE Proceedings 84468C, 11 pages (2012).
1. Gasnault, O., **Mazoyer, J.**, Cousin, A., et al., “Deciphering Sample and Atmospheric Oxygen Contents with ChemCam on Mar.,” 43rd LPSC, 2888, 2 pages (2012).



## 5 PHD THESIS – Université Paris Diderot

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- **Mazoyer, J.**, “Haut contraste pour l’imagerie directe d’exoplanètes et de disques: de la self-coherent camera à l’analyse de données NICI,” Thesis manuscript (219 pages, French), **defended in Sep. 2014**.

Link: <http://adsabs.harvard.edu/abs/2014PhDT.....497M>

## 6 PRESENTATIONS

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### 6.1 INVITED PRESENTATIONS

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**

### 6.2 WORKSHOPS AND CONFERENCES

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, Grapewine, 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.**

### 6.3 SEMINARS

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**.

## 6.4 PUBLIC PRESENTATIONS

- "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**.