

Dr. Marie Ygouf

TECHNOLOGIST FOR THE ROMAN SPACE TELESCOPE CORONAGRAPHIC INSTRUMENT

Jet Propulsion Laboratory - 4800 Oak Grove Dr, Pasadena, CA 91109

✉ marie.ygouf@jpl.nasa.gov 🏠 www.its.caltech.edu/~mygouf/ 🌐 <https://www.linkedin.com/in/mygouf/>

Research and Work Experience

Jet Propulsion Laboratory

Pasadena, USA

TECHNOLOGIST

Since 2020

- *Roman Space Telescope CGI*
 - Member of the Roman Space Telescope CGI Project Science Team.

California Institute of Technology / IPAC

Pasadena, USA

POSTDOCTORAL RESEARCHER

2016-2020

- *JWST (James Webb Space Telescope) project*
 - Preparation of direct imaging observations of exoplanets and disks for the NIRCcam Guaranteed Time Observations team. Development of data reduction and analysis pipelines.

STScI (Space Telescope Science Institute)

Baltimore, USA

POSTDOCTORAL FELLOW

2014 - 2016

- *WFIRST (Wide-Field Infrared Survey Telescope) project*
 - Algorithms development, validation and optimization for the analysis of imaging and multi-wavelength data.
- *JWST / NIRISS (James Webb Space Telescope / Near-InfraRed Imager and Slitless Spectrograph) project*
 - Development of a post-processing technique for object reconstruction and calibration with the Non-Redundant Masking (NRM) mode of JWST.
- *JWST / JOST (James Webb Space Telescope / JWST Optical Simulation Testbed) project*
 - Alignment and setting up of a tabletop workbench to study aspects of wavefront sensing and control for the JWST, including both commissioning and maintenance activities.

IOL/UMD (Intelligent Optics Laboratory / University of Maryland)

College Park, USA

RESEARCH ASSOCIATE

2013 - 2014

- Research development of non-conventional adaptive optics imaging techniques with joint UMD / Army Research Laboratory (ARL) research team (MCAO for horizontal path propagation, WFS&C, modeling and optimization).

IPAG (Institut de Planétologie et d'Astrophysique de Grenoble, France)

Grenoble, France

PHD CANDIDATE

2011 - 2013

- *Projet VLT / SPHERE (Spectro Polarimetric High contrast Exoplanet REsearch)*
 - Validation tests of an advanced data processing algorithm called Medusae for high contrast multi-spectral imaging systems in the framework of the detection and characterization of exoplanets

ONERA (Office National d'Études et de Recherches Aérospatiales)

Châtillon, France

PHD CANDIDATE

2009 - 2011

- *Projet VLT / SPHERE (Spectro Polarimetric High contrast Exoplanet REsearch)*
 - Development of an advanced data processing algorithm called Medusae for high contrast multi-spectral imaging systems in the framework of the detection and characterization of exoplanets.

Sagem Défense Sécurité – Département REOSC

St-Pierre-du-Perray, France

OPTICAL ENGINEER

2007 - 2009

- *European – Extremely Large Telescope (E-ELT) project*
 - Optical design, characterization, integration, alignment and validation of an interferometric bench for the characterization of the E-ELT segmented primary mirror.

Observatoire de Paris-Meudon / LESIA (Laboratoire d'Études Spatiales et d'Instrumentation en Astrophysique)

Meudon, France

INSTRUMENTATION INTERNSHIP

Summer 2007

- *Darwin Project*
 - Study of a new concept of achromatic phase shifter for nulling interferometry in the framework of terrestrial exoplanet direct detection.

Education

Université Joseph Fourier

Grenoble, France

PHD IN ASTROPHYSICS

2009-2012

- Thesis advisors: Dr. Jean-Luc Beuzit, Dr. Thierry Fusco, Dr. Laurent Mugnier, and Dr. David Mouillet.

Institut d'Optique Graduate School aka « École Supérieure d'Optique »

Palaiseau, France

MSC IN OPTICAL SCIENCES AND ENGINEERING, WITH HONORS

2007-2009

- With 12-months Internship at the Sagem Défense Sécurité Company (Sagem REOSC), working on interferometric metrology of the E-ELT primary mirror segments.y).

Université Pierre et Marie Curie, Paris VI

Paris, France

BSC IN FUNDAMENTAL PHYSICS, WITH HONORS

2003-2007

Summer Schools and Trainings

AAS Conference

Kissimee, USA

BAYESIAN METHODS IN ASTRONOMY: HANDS-ON STATISTICS

2016

- Bayesian approach in an astronomical context, starting with a brief overview of relevant background and moving into practical exercises in modeling increasingly complicated data using Markov Chain Monte Carlo (MCMC) methods.

Sagan Exoplanet Summer Workshop

Pasadena, USA

IMAGING PLANETS AND DISKS

2014

- The workshop explored current techniques and technology used to detect and image exoplanets and debris disks, as well as the underlying science driving the modeling of exoplanetary atmospheres and disk structure.

Observatoire de Haute-Provence

St-Michel-l'Observatoire, France

SYSTEM ENGINEERING FOR ASTRONOMY PROJECTS WORKSHOP

2010

- Roles and responsibilities of project actors. Systems Engineering Processes and Product development life-cycle. Functional analysis. System Design. Performance analysis and system optimization. Assembly, integration, installation and test.

Summer School in Signal and Image Processing

Porquerolles, France

INVERSE PROBLEMS IN SIGNAL AND IMAGE PROCESSING

2010

- Held annually since 2006, the Summer School in Signal and Image Processing is organized by the GRETSI (Research Group in Signal and Image Processing) and aimed at presenting a synthesis and the most recent advancements in a topical research theme).

Summer School Alpbach

Alpbach, Autriche

EXOPLANETS: DISCOVERING AND CHARACTERIZING EARTH TYPE PLANETS

2009

- Held annually since 1975, the Alpbach Summer School enjoys a long tradition in providing in- depth teaching on aspects of space science and space technology with the aim of advancing the training and working experience of European graduates, post-graduate students, young scientists and engineers.

Honors & Awards

- 2019 **Candace Rypisi Outstanding Mentor Award**, Recipient of the Mentor of the Year Award as part of my contribution to the Caltech Women Mentoring Women Program Pasadena, USA

Invited Talks

- 2018 **Combining high-resolution spectroscopy and high-contrast imaging for exoplanet characterization workshop at Caltech**, Talk: *Speckle chromatic noise and reduction of high-contrast data* Pasadena, USA
- 2018 **Technology for Direct Detection and Characterization of Exoplanets workshop at JPL**, Talk: *Synergies between Post-Processing, Wavefront Sensing and Coronagraph Design* Pasadena, USA
- 2017 **Optimal Optical Coronagraphs workshop at Lorentz Center (30 experts)**, Panel discussion: *Experience from current space-based coronagraph instruments and testbeds* Leiden, Pays-Bas

Accepted Proposals

JPL STRATEGIC INITIATIVE PROPOSAL FOR THE RESEARCH AND TECHNOLOGY DEVELOPMENT FUND FOR FY20

- 2019 Rocha, **Ygouf** et al., Speckle Suppression for Coronagraphic Observations with the James Webb Space Telescope

JAMES WEBB SPACE TELESCOPE (JWST) - DUE TO BE LAUNCHED IN 2021, THE JWST WILL BE NASA'S PREMIER OBSERVATORY OF THE NEXT DECADE

- 2018 Beichman, **Ygouf** et al., Coronagraphic Imaging of Young Planets
2018 Hodapp, Beichman, **Ygouf** et al., Spectroscopy of Young Planets
2018 Meyer et al., Survey of nearby young M Stars
2018 Gaspar et al., Coronagraphic Imaging of Debris Disks
2018 Roellig et al., Observations of Brown Dwarfs
2017 Hinkley et al., High Contrast Imaging of Exoplanets and Exoplanetary Systems with JWST

HUBBLE SPACE TELESCOPE (HST) - ONE OF THE LARGEST AND MOST VERSATILE SPACE TELESCOPE

- 2019 Gaspard, **Ygouf** et al., The inner planetesimal families around the young solar-analog Eps Eri
2019 Gaspard, **Ygouf** et al., Resolving the Asteroid-belt of the Fomalhaut planetary system
2017 **Ygouf** et al., Revealing the birth environment of circumbinary exoplanets with STIS BAR5

KECK II TELESCOPE - FEATURING A 33 FT PRIMARY MIRROR, CURRENTLY AMONG THE LARGEST ASTRONOMICAL TELESCOPES IN USE (KECK OBSERVATORY - MAUNA KEA - HAWAII)

- 2019 Mawet, **Ygouf** et al., Keck Planet Imager and Characterizer (KPIC): Science Verification of the Fiber Injection Unit to NIRSPEC - Observations to be performed in semester 2020A
Mawet, Meshkat, Patel, **Ygouf** et al., Giant planets in dusty systems on Solar system scales: reboot with the Keck/NIRC2 L/M vortex coronagraph - Observations to be performed in semester 2019B
2019 Mawet, Meshkat, Patel, **Ygouf** et al., Giant planets in dusty systems on Solar system scales: reboot with the Keck/NIRC2 L/M vortex coronagraph - Observations to be performed in semester 2019A
2018 Mawet, Meshkat, Patel, **Ygouf** et al., Giant planets in dusty systems on Solar system scales: reboot with the Keck/NIRC2 L/M vortex coronagraph - Observations performed in semester 2018B
2017 Mawet, Meshkat, Patel, **Ygouf** et al., Giant planets in dusty systems on Solar system scales: reboot with the Keck/NIRC2 L/M vortex coronagraph - Observations performed in semester 2018A
2017 Mawet, Meshkat, Patel, **Ygouf** et al., Giant planets in dusty systems on Solar system scales: reboot with the Keck/NIRC2 L/M vortex coronagraph - Observations performed in semester 2017B
2017 Beichman, Patel, **Ygouf** et al., Observations of Circumstellar Disks Using NIRC2 - Observations performed in semester 2017B
2016 Beichman, Patel, **Ygouf** et al., Observations of Circumstellar Disks Using NIRC2 - Observations performed in semester 2017A

200-INCH HALE TELESCOPE (PALOMAR OBSERVATORY - CALIFORNIA)

- 2019 **Ygouf**, Beichman et al., Validating Reference Stars needed for JWST Coronagraphic Observations of Exoplanet Systems - Observations performed in semester 2019B
2018 Beichman, **Ygouf** et al., Validating Reference Stars needed for JWST Coronagraphic Observations of Exoplanet Systems - Observations performed in semester 2018B
2017 Beichman, **Ygouf** et al., Validating Reference Stars needed for JWST Coronagraphic Observations of Exoplanet Systems - Observations performed in semester 2017B

Science Communication and Public Engagement

EQUITY, DIVERSITY, AND INCLUSION

- 2019 **Letters to a Pre-Scientist**, I have been matched with a 7-grade student pen pal for the school year 2019-2020. The mission of this program is to demystify STEM careers and empower all students to see themselves as future scientists by creating personal connections between students from high-poverty schools and real scientists.
- 2019 **Women in Science panel at the Altadena Public Library**, Panel member for this event held at the Altadena Public Library in August 2019. *Altadena, USA*
- 2019 **Women Mentoring Women**, I have been mentoring Olivia Wilkins who is a graduate student at Caltech since 2017. I was the recipient of the 2019 Caltech Mentor of the Year Award as part of this engagement. *Pasadena, USA*
- 2019 **White Dove Film**, I am an associate producer for the White Dove Film that increases representation and inclusion with a female writer/director/producer, cast and crew members that are Native American, multi-ethnic, and LGBTQ. *Los Angeles, USA*

OTHER SCIENCE COMMUNICATION ACTIVITIES

- 2019 **Astronomy Now Magazine (UK)**, I was interviewed for the May issue of the Astronomy Now Magazine in an article entitled "Capturing New Worlds: How to Image an Exoplanet".
- 2019 **"A Conversation with the Stars" lecture series at the Glendale Community College Planetarium**, Speaker - Outreach talk untitled: "Observing Aliens Worlds". *Glendale, USA*
- 2019 **Solar System Ambassador program**, NASA Solar System Ambassador for this program, which is a public engagement effort that works with motivated volunteers across the nation to communicate the science and excitement of NASA's space exploration missions and discoveries in their communities. *Pasadena, USA*
- 2019 **Portable Planetarium Visits at Chase Child Life @ UMCH**, Planetarium assistant. *Los Angeles, USA*
- 2019 **Astronomy on Tap**, Speaker - Outreach talk untitled: "Staggering with the Stars." *Pasadena, USA*
- 2018 **NASA's Universe of Learning**, Science advisor for two NASA's educational videos about habitability of exoplanets (Universe Unplugged video series).
- 2018 **Adopt-a-Physicist**, During a three-week period, I hosted a discussion forum populated by three classes that adopted me for this outreach program.
- 2018 **Caltech Astronomy**, Animator for various public outreach events (AstroFest 2018, Stargazing, Science Train). *Pasadena, USA*
- 2018 **Skype a Scientist**, Science communicator for classrooms around the world.
- 2018 **Arroyo Seco Weekend**, Speaker - Outreach talk untitled: "Observing Alien Worlds." *Pasadena, USA*
- 2018 **Arroyo Seco Weekend**, Exoplanet science expert for the "NASA Visions of the Future" exhibit. *Pasadena, USA*
- 2018 **JPL Open House**, Exoplanet science expert at the exoplanet booth. *Pasadena, USA*
- 2017 **Skype a Scientist**, Science communicator for classrooms around the world.
- 2017 **JPL Open House**, Exoplanet science expert at the exoplanet booth. *Pasadena, USA*
- 2012 **IPAG**, Telescope assistant at the Grenoble Observatory (public observing sessions). *Grenoble, France*
- 2007 **Telligo**, Astronomy adviser in a summer camp. *Aignan, France*

Other Duties

PROPOSAL EVALUATIONS

- 2019 **Panel Member**, Future Investigators in NASA Earth and Space Science and Technology
- 2019 **Panel Monitor**, NASA Keck Time Allocation Committee *Pasadena, USA*
- 2019 **Judge at the #233 AAS Meeting**, Chambliss Astronomy Achievement Student Award *Seattle, USA*
- 2018 **Panel Member**, Second round of Mid-Cycle 25 review of proposals for the Hubble Space Telescope
- 2018 **Panel Member**, NASA Earth and Space Science Fellowship Program
- 2017 **Panel Member**, First round of Mid-Cycle 25 review of proposals for the Hubble Space Telescope
- 2017 **Panel Member**, NITARP, the NASA/IPAC Teacher Archive Research Program *Pasadena, USA*
- 2017 **Session chair**, Exoclipse Conference *Boise, USA*
- 2017 **Session chair**, #230 AAS Meeting - 402 Extrasolar Planets: Characterization and Theory *Austin, USA*
- 2016 **Panel Support Member**, Cycle 24 review of proposals for the Hubble Space Telescope *Baltimore, USA*

SEMINARS AND WORKSHOPS ORGANIZATION

- 2018 **Science Organizing Committee Member**, *ExSoCal 2018 - The 4th Annual Gathering of Southern California Exoplaneteers (85 participants)* *Pasadena, USA*
- 2018 **Science and Local Organizing Committee Member**, *Combining high-resolution spectroscopy and high-contrast imaging for exoplanet characterization (48 participants)* *Pasadena, USA*
- 2018 **Science Organizing Committee Member**, *JPL-MPIA Meeting on Direct Imaging* *Pasadena, USA*
- 2018 **Organizing Committee Member**, *Pasadena Astronomy Post-doc Retreat 2018 (40 participants)* *Pasadena, USA*
- 2017 **Co-Organizer**, Post-processing for High-Contrast Imaging with JWST workshop at IPAC (22 experts) *Pasadena, USA*
- 2017 **Local Organizing Committee Member**, *ExSoCal2017 conference: the 3rd Annual Gathering of Southern California Exoplaneteers at NASA Exoplanet Science Institute (90 participants)* *Pasadena, USA*
- 2017 **Science Organizing Committee Member**, *High Contrast Imaging with Space-based Coronagraphs* workshop at STScI (76 participants) *Baltimore, USA*
- 2016 **Science Organizing Committee Member**, *Exoplanets and Disks: Bridging their Composition and Communities* workshop at STScI (64 participants) *Baltimore, USA*

Publications

- 2020 **M. Ygouf, et al.**, High Contrast Imaging of Circumstellar Environments with JWST/NIRCam, *in preparation*
- 2020 **M. Ygouf, et al.**, Validating Reference Stars Needed for JWST Coronagraphic Observations of Exoplanet Systems, *in preparation*
- 2020 **M. Ygouf, et al.**, Revealing the circumbinary environment around XXXX, *in preparation*
- 2020 **R. Patel, M. Ygouf, et al.**, XXXX in L'-band with the Vortex Coronagraph, *in preparation*
- 2019 **C. Beichman, M. Ygouf, et al.**, Searching for Planets Orbiting α Cen A with the James Webb Space Telescope, *PASP, Accepted*
- 2019 **D. Mawet, L. Hirsch, E. J. Lee, J.-B. Ruffio, M. Bottom, B. J. Fulton, O. Absil, [...], M. Ygouf**, Deep exploration of ϵ eridani with Keck *M*s-Band vortex coronagraphy and radial velocities: mass and orbital parameters of the giant exoplanet, *The Astronomical Journal*
- 2018 **T. Meshkat, R. Nilsson, J. Aguilar, G. Vasisht, R. Oppenheimer, K.Y.L. Su, [...], M. Ygouf et al.**, A deep search for planets in the inner 15 AU around Vega, *Astrophys. J.*
- 2018 **T. J. David, E. E. Mamajek, A. Vanderburg, J. E. Schlieder, M. Bristow, [...], M. Ygouf**, Discovery of a Transiting Adolescent Sub-Neptune Exoplanet in the Cas-Tau Association with K2, *The Astronomical Journal*
- 2018 **G. Ruane, A. Riggs, J. Mazoyer, E. H. Por, M. N'Diaye, E. Huby, P. Baudoz, [...], M. Ygouf**, Review of high-contrast imaging systems for current and future ground- and space-based telescopes I: coronagraph design methods and optical performance metrics, in SPIE Conference Series
- 2018 **N. Jovanovic, O. Absil, P. Baudoz, M. Beaulieu, M. Bottom, E. Cady, B. Carlomagno, [...], M. Ygouf**, Review of high-contrast imaging systems for current and future ground-based and space-based telescopes II. Common path wavefront sensing/control and Coherent Differential Imaging, in SPIE Conference Series
- 2018 **F. Snik, O. Absil, P. Baudoz, M. Beaulieu, E. Bendek, E. Cady, B. Carlomagno, [...], M. Ygouf**, Review of high-contrast imaging systems for current and future ground-based and space-based telescopes III: technology opportunities and pathways, in SPIE Conference Series
- 2017 **M. Ygouf et al.**, High-contrast imaging with the JWST-NIRSpec Integral Field Unit, in SF2A
- 2017 **S. Egron, C.-P. Lajoie, V. Michau, A. Bonnefois, C. Escolle, L. Leboulleux, M. N'Diaye, [...], M. Ygouf et al.**, James Webb Space telescope optical simulation testbed: experimental results with linear control alignment, in SPIE Conference Series
- 2016 **M. Ygouf et al.**, Data processing and algorithm development for the WFIRST-AFTA coronagraph, in SPIE Conference Series
- 2016 **S. Egron R. Soummer, M. D. Perrin, E. Choquet, M. N'Diaye, C.-P. Lajoie, M. Ygouf et al.**, James Webb Space Telescope optical simulation testbed III first experimental results with linear-control alignment, in SPIE Conference Series
- 2015 **J. H. Debes, M. Ygouf et al.**, WFIRST-AFTA Coronagraphic Operations: Lessons Learned from the Hubble Space Telescope and the James Webb Space Telescope, in JATIS
- 2015 **M. Ygouf et al.**, Data Processing and Algorithm Development for the WFIRST-AFTA Coronagraph: Reduction of Noise Free Simulated Images, Analysis and Spectrum Extraction with Reference Star Differential Imaging, in SPIE Conference Series
- 2015 **B. Mennesson, J. Krist, B. Nemati, M. Ygouf et al.**, WFIRST- AFTA coronagraph performance: feedback from post-processing studies to overall design, in SPIE Conference Series
- 2014 **M. Perrin, R. Soummer, E. Choquet, M. N'Diaye, O. Levecq, C.-P. Lajoie, M. Ygouf et al.**, James Webb Space Telescope Optical Simulation Testbed I: Overview and First Results, in SPIE Conference Series
- 2014 **M. Ygouf et al.**, Wavefront Sensorless Multi-Conjugate Adaptive Optics for Imaging in Deep Atmospheric Turbulence: Preliminary Numerical Analysis, in IEEE Aerospace Conference
- 2014 **M. Aubailly, M. Ygouf et al.**, Multi-Aperture Imaging Based on Complex-Field Sensing: Numerical Analysis of Key Requirements, in IEEE Aerospace Conference
- 2013 **M. Ygouf et al.**, Simultaneous exoplanet detection and instrument aberration retrieval in multispectral coronagraphic imaging, in *Astronomy and Astrophysics*

- 2013 **M. Ygouf et al.**, New method of multispectral image post-processing based on instrument model for high contrast imaging systems: Application to exoplanet detection. PhD Thesis, Université Joseph Fourier
- 2012 **M. Ygouf et al.**, Myopic exoplanet detection algorithm based on an analytical model of AO-corrected coronagraphic multispectral imaging, in Adaptive Optics for Extremely Large Telescopes (AO4ELT)
- 2011 **M. Ygouf et al.**, Restauration myope d'images coronagraphiques pour la détection d'exoplanètes, in 23ème Colloque sur le Traitement du Signal et des Images
- 2010 **M. Ygouf et al.**, Approximate analytical expression for AO-corrected coronagraphic imaging in preparation of exoplanet signal extraction, in SF2A
- 2010 **V. Eybl, M. Xiang-Grüß, H. Lammer, J. Antoniadis, G. Barentesen, [...] , M. Ygouf et al.**, A new approach to investigate star-planet-interaction based on UV transit observations of terrestrial planets around M-dwarfs, in European Planetary Science Congress
- 2007 **D. Rouan, D. Pelat, M. Ygouf et al.**, A new concept of achromatic phase shifter for nulling interferometry, in SPIE Conference Series

PAPERS WITH CONTRIBUTIONS CREDITED IN THE ACKNOWLEDGMENTS

- 2010 **Sauvage, Mugnier, Rousset, Fusco**, Analytical expression of long-exposure AO-corrected coronagraphic image. First application to exoplanet detection, in JOSAA
- 2008 **Rouan, Pelat**, The achromatic chessboard, a new concept of a phase shifter for nulling interferometry. I. Theory, in A&A

Technical Reports

- 2016 **M. Ygouf, N. Zimmerman, L. Pueyo, M. Perrin, R. Soummer**, "Data Post Processing and Algorithm Development for the WFIRST-AFTA Coronagraph", FY15 final report, Space Telescope Science Institute
- 2015 **M. Ygouf, L. Pueyo, M. Perrin, R. Soummer**, "Data Post Processing and Algorithm Development for the WFIRST-AFTA Coronagraph", First Progress Report, Space Telescope Science Institute
- 2014 **M. Ygouf et al.**, "AFTA Coronagraphic Technology – Data Post-Processing and Algorithm Development", FY14 final report, Space Telescope Science Institute
- 2009 **M. Ygouf**, "Quality approach applied to the optical metrology of the E-ELT primary mirror prototype segments," End of study report – Part 2, Sagem REOSC
- 2009 **M. Ygouf**, "Optical metrology of the E-ELT primary mirror prototype segments," End of study report – Part 1, Sagem REOSC
- 2009 **M. Ygouf**, "Commissioning plan of the interferometric test bench of the E-ELT prototype segments," Technical note, Sagem REOSC
- 2009 **M. Ygouf**, "Commissioning report of the optical substrates for the interferometric test bench of the E-ELT prototype segments," Technical note, Sagem REOSC
- 2008 **M. Ygouf**, "Statement of work for the study of an optical test bench which will be used to control the E-ELT primary mirror segments," Project specifications, Sagem REOSC
- 2008 **M. Ygouf**, "Measurement principle of optical substrates for the interferometric test bench of the E-ELT prototype segments," Technical note, Sagem REOSC
- 2008 **M. Ygouf**, "Test report on the imaging correction WFE impact for the interferometric test bench of the E-ELT prototype segments," Technical note, Sagem REOSC
- 2008 **M. Ygouf**, "Implementation of the interferometric test bench of the E-ELT prototype segments with the Zemax software," Technical note, Sagem REOSC

Communications

CONFERENCES PRESENTATIONS

- 2019 **M. Ygouf**, "Model-based algorithm for high-contrast imaging with JWST", at the 2019 Greater IPAC Technology Symposium *Pasadena, USA*
- 2019 **M. Ygouf**, "Speckle Suppression for Coronagraphic Observations with the James Webb Space Telescope", at the 2019 Greater IPAC Science Symposium *Pasadena, USA*
- 2019 **M. Ygouf**, NASA Hyperwall talk given by NASA experts: "High-Contrast Imaging of Exoplanets with JWST", at AAS Conference *Seattle, USA*
- 2019 **M. Ygouf et al.**, "High-Contrast Imaging of a New Circumbinary Disk Around a Young Spectroscopic Binary", at AAS Conference *Seattle, USA*
- 2018 **M. Ygouf**, "High-Contrast Imaging of a New Circumbinary Disk Around a Young Spectroscopic Binary", at ExSoCal Conference *Pasadena, USA*
- 2018 **M. Ygouf**, "High-contrast imaging with JWST", at ExSoCal Conference *Pasadena, USA*
- 2018 **M. Ygouf et al.**, "High contrast imaging with the JWST-NIRSpec Integral Field Unit" at Sagan Exoplanet Summer workshop *Pasadena, USA*
- 2018 **M. Ygouf et al.**, "High-Contrast Imaging of a New Circumbinary Disk Around a Young Spectroscopic Binary", at the COSPAR Assembly *Pasadena, USA*
- 2018 **M. Ygouf**, "High-Contrast Imaging of a New Circumbinary Disk Around a Young Spectroscopic Binary", at the 2018 Greater IPAC Science Symposium *Pasadena, USA*
- 2018 **M. Ygouf**, "Speckle chromatic noise and reduction of high-contrast data", at the High Dispersion Spectroscopy workshop *Pasadena, USA*
- 2018 **M. Ygouf**, "Synergies between Post-Processing", Wavefront Sensing and Coronagraph Design at the Technology for Direct Detection and Characterization of Exoplanets workshop *Pasadena, USA*
- 2017 **M. Ygouf**, "Experience from current space-based coronagraph instruments and testbeds" at the Optimal Optical Coronagraphs workshop *Leiden, Pays-Bas*
- 2017 **M. Ygouf**, "High-Contrast Imaging of Young Planets with JWST", at ExSoCal Conference *Pasadena, USA*
- 2017 **M. Ygouf**, "High-Contrast Imaging of Young Planets with JWST", at Exoclipse Conference *Boise, USA*
- 2017 **M. Ygouf et al.**, "High contrast imaging with the JWST-NIRSpec Integral Field Unit" at AAS Meeting *Austin, USA*
- 2017 **C. Beichman, M. Ygouf et al.**, "NIRCam Coronagraphic Observations of Disks and Planetary Systems" at AAS Meeting *Austin, USA*
- 2017 **J. Schlieder, M. Meyer, C. Beichman, M. Reggiani, S. Daemgen, J. Leisenring, and M. Ygouf**, "A JWST NIRCam Coronagraphic Imaging Survey of Nearby Young M Dwarfs" at AAS Meeting *Austin, USA*
- 2017 **M. Ygouf**, "High-Contrast Imaging of Young Planets with JWST", at the Greater IPAC Science Symposium *Pasadena, USA*
- 2016 **M. Ygouf et al.**, "PSF-subtraction for the WFIRST-AFTA telescope" at AAS Meeting *Kissimmee, USA*
- 2016 **N. Zimmerman, M. Ygouf et al.**, "Post-processing images from the WFIRST-AFTA coronagraph testbed" at AAS Meeting *Kissimmee, USA*
- 2016 **M. Perrin, E. Choquet, A. Greenbaum, B. Ren, J. Debes, J. Mazoyer, M. Ygouf et al.**, "HST STIS & NICMOS Coronagraphy of Four Debris Disks around Young Solar Analogs" at AAS Conference *Kissimmee, USA*
- 2015 **M. Ygouf et al.**, "PSF-subtraction for the WFIRST-AFTA telescope" at In the Spirit of Lyot Conference *Montreal, Canada*
- 2015 **F. Cantalloube, M. Ygouf et al.**, "MEDUSAE, a Bayesian inverse problem approach to detect and characterize exoplanets in multispectral images" at In the Spirit of Lyot Conference *Montreal, Canada*
- 2016 **M. Perrin, E. Choquet, A. Greenbaum, B. Ren, J. Mazoyer, M. Ygouf et al.**, "HST STIS Coronagraphy of Four Debris Disks around Young Solar Analogs" at In the Spirit of Lyot Conference *Montreal, Canada*
- 2015 **E. Choquet, M. Perrin, R. Soummer, L. Pueyo, D. Golimowski, C. Chen, A. Moro-Martin, J. Debes, D. Hines, C. Stark, M. N'Diaye, M. Ygouf et al.**, "Four more detections from the NICMOS archive: Newly seen debris disks around several M dwarfs and a young Solar Twin" at In the Spirit of Lyot Conference *Montreal, Canada*
- 2015 **M. Ygouf et al.**, "Post-processing methods for high-contrast imaging in the context of the WFIRST-AFTA telescope" at AAS Conference *Seattle, USA*
- 2014 **M. Ygouf et al.**, "New method of multispectral image post-processing based on an instrument model for high contrast imaging systems" at Sagan Exoplanet Summer workshop *Pasadena, USA*

- 2014 **M. Ygouf et al.**, "Image processing methods to detect and characterize exoplanets based on Bayesian inverse problems solving" at Sagan Exoplanet Summer workshop *Pasadena, USA*
- 2010 **F. Cantalloube, M. Ygouf et al.**, "Approximate analytical model of AO-corrected coronagraphic imaging, with a view to exoplanet detection and characterization" at In the Spirit of Lyot Conference *Paris, France*

SEMINARS

- 2018 **M. Ygouf**, "High-Contrast Imaging of a New Circumbinary Disk Around a Young Spectroscopic Binary", California Institute of Technology *Pasadena, USA*
- 2017 **M. Ygouf**, "Direct Imaging of Exoplanets with JWST", NASA's Ames Research Center *Mountain View, USA*
- 2017 **M. Ygouf**, "Post-processing for the WFIRST Coronagraph", IPAC - California Institute of Technology *Pasadena, USA*
- 2017 **M. Ygouf**, "Post-processing for the WFIRST Coronagraph", NASA Jet Propulsion Laboratory *Pasadena, USA*
- 2016 **M. Ygouf**, "Post-processing for the WFIRST Coronagraph", NASA Jet Propulsion Laboratory, Pasadena "Post-processing for the WFIRST and JWST Coronagraphs", Office National d'Études et de Recherches Aérospatiales *Châtillon, France*
- 2016 **M. Ygouf**, "Post-processing for the WFIRST and JWST Coronagraphs", University of California *Berkeley, USA*
- 2016 **M. Ygouf**, "Post-processing for the WFIRST and JWST Coronagraphs", Stanford University *Mountain View, USA*
- 2016 **M. Ygouf**, "To Roll or Not To Roll? Signal Detection Theory Applied to the WFIRST Coronagraph", Space Telescope Science Institute *Baltimore, USA*
- 2015 **M. Ygouf**, "Post-processing for the WFIRST-AFTA Coronagraph", Office National d'Études et de Recherches Aérospatiales *Châtillon, France*
- 2015 **M. Ygouf**, "Post-processing for the WFIRST-AFTA Coronagraph", Laboratoire d'Astrophysique de Marseille *Marseille, France*
- 2015 **M. Ygouf**, "PSF subtraction in the context of WFIRST-AFTA", Exoplanet Journal Club, NASA-Goddard Flight Space Center *Greenbelt, USA*
- 2015 **M. Ygouf**, "Post-processing in the context of WFIRST-AFTA", Science Coffee, Space Telescope Science Institute *Baltimore, USA*
- 2012 **M. Ygouf**, "Simultaneous exoplanet detection and instrument aberration retrieval in multispectral coronagraphic imaging", NASA Jet Propulsion Laboratory *Pasadena, USA*
- 2012 **M. Ygouf**, "Simultaneous exoplanet detection and instrument aberration retrieval in multispectral coronagraphic imaging", California Institute of Technology *Pasadena, USA*
- 2012 **M. Ygouf**, "Simultaneous exoplanet detection and instrument aberration retrieval in multispectral coronagraphic imaging", Star and Planet Formation Seminars, Space Telescope Science Institute *Baltimore, USA*