

Jérôme Maire, Ph.D.

Curriculum Vitae

Center for Astrophysics & Space Sciences,
University of California, San Diego
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Academic Positions

- **Project Scientist** Oct 2016-present
Center for Astrophysics & Space Sciences, University of California, San Diego, USA
 - *Astronomical Instrumentation*
 - *Near-infrared SETI*
- **Post-doctoral Dunlap Fellowship** Sep 2011-Sep 2016
Dunlap Institute for Astronomy & Astrophysics, University of Toronto, Canada
 - *Direct Imaging of Exoplanets with the Gemini Planet Imager, an Extreme Adaptive Optics system*
 - *Astronomy in the Arctic*
 - *Near-infrared SETI*
- **Post-doctoral Fellowship** Sep 2007-Aug 2011
Université de Montréal, Canada
Gemini Planet Imager - Data Reduction Pipeline
- **Sessional lecturer (“Attaché Temporaire d’Enseignement et de Recherche”)** Sep 2006-Aug 2007
Université de Nice, UFR Sciences – Department of Physics, France

Education

- **Qualification for teaching in French University** 2008-2019
CNU section 34, Physics, Astronomy, Astrophysics.
- **PhD in Sciences of the Universe** May 2007
Université de Nice - Sophia Antipolis (UNSA), France
Dissertation title : *Optical effects of the atmospheric turbulence for Extremely Large Telescopes and High Angular Resolution observations*
<http://tel.archives-ouvertes.fr/tel-00192172/fr/>
- **MSc in Physics, DEA High Angular Resolution in Astronomy** Aug 2001
Université de Nice - Sophia Antipolis (UNSA)
- **Baccalaureat (“Licence” in french) in Physics - Mathematics** Aug 1999
Université de Nice - Sophia Antipolis (UNSA)

Teaching & Supervising Experience

- **AstroTech instrumentation school, Development Workshop, UC Berkeley** 2019
Lab activity designer, developer and instructor, lab on image formation
- **Astronomical Instrumentation Summer School, 1st, 2nd & 3rd Editions, University of Toronto** 2012-2015
Science Organizing Committee member and Local Organizing Committee member
Lab activity designer, developer and instructor :
42 students, labs on Wavefront sensing, Spectroscopy, Detector characterizations, 21 lab stations
- **Co-supervision of summer students, University of Toronto, UC San Diego** 2012-2014
Gemini Planet Imager Data processing (2012), Gemini Planet imager Data Analysis (2014), Infrared SETI (2014,2016)
- **Co-supervision of MSc student, University of Nice, Adaptive Optics (2006)** 2006
- **Teaching at the Physics department of the University of Nice, France**
 - **Optics**, Undergrad 1st year, 54 hours, practical works 2006-2007
 - **Electromagnetism**, Undergrad 2nd year, 54 hours, practical works 2006-2007
 - **Mechanics**, Undergrad 1st year, 24 hours, practical works 2006-2007
 - **Electronics**, Undergrad 3rd year, 24 hours, practical works 2006-2007

- **High Angular Resolution Workshop**, MSc 2nd year, 10 hours, courses 2005-2006
- **Electronics**, Undergrad 3rd year, 24 hours, practical works 2005-2006
- **Physics-Chemistry Substitute Teacher, secondary** Sep 2001-Aug 2002
Rectorat de Nice, Collèges Rostand et Colette (Draguignan, Puget sur Argens, France)

Scientific missions

- **Palomar Observatory, CA, USA** Jun 2020-Oct 2020
Panoramic SETI, first-light, prototype
- **Mt Laguna Observatory, CA, USA** Oct 2017-Jun 2019
Panoramic SETI, first-light, prototype
- **Lick Observatory, Mount Hamilton, CA, USA** Mar 2015-Dec 2020
Near-Infrared SETI, first-light commissioning run
- **Gemini Observatory, Cerro Pachon, Chile** May 2014, Apr 2015
Gemini Planet Imager, GPI commissioning run
- **New Mexico Skies, NM, USA** May 2013, April 2015
SloDAR site testing, Dunlap 0.5m-telescope
- **PEARL Station, Ellesmere Island, Nunavut, Canada** Oct-Nov 2012
Eureka – Canadian Network for the Detection of Atmospheric Change, site testing
- **Cerro Paranal Observatory, Chile** Dec 2012
ESO OPTICON/FP6 multi-instruments campaign « Large scale wavefront properties »
- **Mauna Kea Observatory, Hawaii, USA** Jul 2005
24" Telescope of the University of Hawaii
- **Observatoire de Haute Provence, France** Nov-Dec 2004
Site testing, atmospheric turbulence profiling
- **Observatoire de la Côte d'Azur, France** 2003, 2006
GI2T long-baseline stellar interferometer, GSM site testing

Additional skills

- **Programming skills :**
Matlab, IDL, C, C++, Mathematica, Optics : Zemax
- **Machining skills :**
CNC, milling, drilling and lathe machines. CAD & machining programming : SolidWorks, Rhino, SprutCam, G-code
- **Languages :**
French (native), English (fluent)
- **Referee :**
'Monthly Notices of the Royal Astronomical Society' (Oxford Academic); 'Optics Communications' (Elsevier);

Media Appearances

- **Innovators in Instrumentation Exhibition** Mar 2013
University of Toronto
- **TV Report : "Espace, l'odyssée du futur : Seuls dans l'espace"** Oct 2016
Planete +

Publications

Journal Articles

Co-authors : 50 refereed papers, 61 conference proceedings

Selected papers :

- [1] **J. Maire**, Wright, S. A., Barrett, C. T., et al., "Search for Nanosecond Near-infrared Transients around 1280 Celestial Objects"
The Astronomical Journal, 2019, 158, 203

- [2] **J. Maire**, A. Ziad, J. Borgnino, and F. Martin. "Comparison between atmospheric turbulence models by angle-of-arrival measurements." *Monthly Notices of the Royal Astronomical Society*, Volume 386, Issue 2, pp. 1064-1068, 2008 ;
- [3] **J. Maire**, A. Ziad, J. Borgnino, and F. Martin. "Measurements of profiles of the wavefront outer scale using observations of the limb of the Moon." *Monthly Notices of the Royal Astronomical Society*, 377 :1236–1244, May 2007 ;
- [4] **J. Maire**, A. Ziad, J. Borgnino, D. Mourard, F. Martin, S. Jankov, D. Bonneau, and F. Patru. "Wavefront outer scale deduced from interferometric dispersed fringes." *Astronomy & Astrophysics*, 448 :1225–1234, March 2006 ;
- [5] **J. Maire** et al "Panoramic SETI : on-sky results from prototype telescopes and instrumental design" *SPIE X-ray, Optical, and Infrared Detectors for Astronomy IX*, p-11454-130 (2020).
- [6] **J. Maire** et al "Panoramic optical and near-infrared SETI instrument : optical and structural design concepts." *SPIE Ground-based and Airborne Instrumentation for Astronomy VII 107025L* (2018).
- [7] **J. Maire**, Wright, S. A., Dorval, P., Drake, F. D., Duenas, A., Isaacson et al, "A near-infrared SETI experiment : commissioning, data analysis, and performance results", *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference*, 2016, 9908, 990810,
- [8] **J. Maire**, Ingraham, P. J. ; De Rosa, R. J. ; Perrin, M. D. ; Rajan, A. ; Savransky, D. ; Wang, J. J. ; Ruffio, J.-B. ; Wolff, S. G. ; Chilcote, J. K. ; Doyon, R. ; Graham, J. R. ; Greenbaum, A. Z. ; Konopacky, Q. M. ; Larkin, J. E. ; Macintosh, B. A. ; Marois, C. ; Millar-Blanchaer, M. ; Patience, J. ; Pueyo, L. A. ; Sivaramakrishnan, A. ; Thomas, S. J. ; Weiss, J. L. "Gemini Planet Imager Observational Calibrations VI : Photometric and Spectroscopic Calibration for the Integral Field Spectrograph" 2014, *Proceedings of the SPIE*, 9147-307, *Astronomical instrumentation*, Montreal
- [9] **J. Maire**, Wright, S. A. ; Werthimer, D. ; Treffers, R. R. ; Marcy, G. W. ; Stone, R. P. S. ; Drake, F. ; Siemion, A. "A near-infrared SETI experiment : probability distribution of false coincidences" 2014, *Proceedings of the SPIE*, 9147-173, *Astronomical instrumentation*, Montreal
- [10] **J. Maire**, E. Mieda, E. Steinbring, R. Murowinski, J. R. Graham, R. Carlberg, S. A. Wright, N. M. Law, S. Sivanandam, *Optical turbulence profiling with SloDAR in the Canadian High Arctic 2014*, *Proceedings of the SPIE*, 9145-, *Astronomical instrumentation*, Montreal
- [11] **J. Maire**, J. Gagné, D. Lafrenière, J. R. Graham, R. Doyon, "High-fidelity photometry and astrometry of high-contrast imaged companions using LOCI processing." 2013, *IAUS 299 International Astronomical Union Symposium 299 : Exploring The Formation And Evolution Of Planetary Systems*
- [12] **J. Maire**, M. D. Perrin, R. Doyon, J. Chilcote, J. E. Larkin, J. L. Weiss, C. Marois, Q. M. Konopacky, M. Millar-Blanchaer, J. R. Graham, J. Dunn, R. Galicher, F. Marchis, S. J. Wiktorowicz, K. Labrie, S. J. Thomas, S. J. Goodsell, F. T. Rantakyro, D. W. Palmer, Bruce A. Macintosh, "Test results for the Gemini Planet Imager data reduction pipeline", *SPIE Astronomical Telescopes and Instrumentation 2012*, Paper 8451-137 of Conference 8451, July 2012
- [13] **J. Maire**, J. Gagné, D. Lafrenière, R. Doyon, J. R. Graham, J.-P. Véran, L. A. Poyneer, "Preserving the photometric integrity of companions in high-contrast imaging observations using locally optimized combination of images", *SPIE Astronomical Telescopes and Instrumentation 2012*, Paper 8447-225 of Conference 8447, July 2012
- [14] **J. Maire**, M. Perrin, R. Doyon, E. Artigau, J. Dunn, D. Gavel, J. Graham, D. Lafrenière, J. Larkin, J.-F. Lavigne, B. Macintosh, C. Marois, B. Oppenheimer, D. Palmer, L. Poyneer, S. Thibault, J.-P. Véran "Data reduction pipeline for the Gemini Planet Imager." *SPIE Astronomical Telescopes and Instrumentation*, 2010, *Ground-based and Airborne Instrumentation for Astronomy III*. Edited by McLean, Ian S. ; Ramsay, Suzanne K. ; Takami, Hideki. *Proceedings of the SPIE*, Volume 7735, pp. 773531-773531-11 (2010).
- [15] **J. Maire**, J.-P. Véran, L. Poyneer, « Long-Exposure Point Spread Function for GPI ». *OSA Frontiers in Optics 2009/Laser Science XXV. Adaptive Optics*. October 11-15, 2009, San Jose CA USA
- [16] **J. Maire**, A. Ziad, J. Borgnino, F. Martin *MOSP : 'A New Instrument to Measure Wavefront Outer Scale Profiles'*, *OSA Adaptive Optics : Analysis and Methods*, Vancouver, June 2007.

Ph.D. thesis

- [1] Université de Nice - Sophia Antipolis (UNSA), France
 Dissertation title : *Optical effects of the atmospheric turbulence for Extremely Large Telescopes and High Angular Resolution observations*
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