Jérôme Maire, Ph.D.
Curriculum Vitae

Department of Astronomy & Astrophysics,
University of California, San Diego
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Academic Positions

— **Project Scientist** — Oct 2016-present
Department of Astronomy & Astrophysics, University of California, San Diego, USA
– *Astronomical Instrumentation*
– *Optical 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 Space Sciences**
Doctorat en Sciences De l'Univers — 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,**
(Maitrise de Physique, DEA High Angular Resolution in Astronomy) — Aug 2001
Université de Nice - Sophia Antipolis (UNSA)

— **Baccalaureat in Physics & Mathematics**
(Licence de Physique, DEUG Maths-Physique in french) — Aug 1999
Université de Nice - Sophia Antipolis (UNSA)

Teaching & Supervising Experience

— **AstroTech instrumentation school, Development Workshop, UC Berkeley** — 2019, 2021 & 2024
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, pratical works — 2006-2007

- – **Electromagnetism,** Undergrad 2nd year, 54 hours, pratical works — 2006-2007
- – **Mechanics,** Undergrad 1st year, 24 hours, pratical works — 2006-2007
- – **Electronics,** Undergrad 3rd year, 24 hours, pratical works — 2006-2007
- – **High Angular Resolution Workshop,** MSc 2nd year, 10 hours, courses — 2005-2006
- – **Electronics,** Undergrad 3rd year, 24 hours, pratical 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, 78 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 : program update and high-energy astrophysics applications" Proceedings of the SPIE, Volume 12184 (2022).

[6] **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).

[7] **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).

[8] **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,

[9] **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

[10] **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

[11] **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

[12] **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

[13] **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

[14] **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

[15] **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).

[16] **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

[17] **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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