

DIMITRI MAWET

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California Institute of Technology, Astronomy Department MC 249-17

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RESEARCH INTERESTS

Extrasolar planetary systems formation and evolution:

- Exoplanet detection, imaging and spectroscopic remote sensing.
- Proto-planetary, transitional and debris circumstellar disk studies.

Optical/infrared astronomy instrumentation:

- Imaging, spectroscopy, (spectro-)polarimetry.
- High contrast imaging/coronagraphy from optical to mid-infrared wavelengths.
- Optical vortex, and vector vortex coronagraphy.
- Adaptive optics/wavefront control techniques for ground and space-based telescopes.
- Micro/nano-optics, diffractive optics, optical design/modeling, polarization.

EDUCATION

Ph.D. in Science, University of Liège Sep 2006

- Thesis: *Subwavelength gratings for extrasolar planetary system detection and characterization.*
- Advisor: Prof. J. Surdej

M.Phil. in Science, University of Liège Jun 2004

- Thesis: *Applications des réseaux sub-lambda en interférométrie et coronographie.*
- Advisor: Prof. J. Surdej

M.Phil. in Physical Engineering, University of Liège Sep 2002

- Thesis: *Etude d'un coronographe à 4 quadrants au moyen de l'optique diffractive.*
- Advisor: Prof. J. Surdej

B.S. in Civil Engineering, University of Liège Sep 1999

APPOINTMENTS & EXPERIENCE

California Institute of Technology Feb 2015 - Present
Associate Professor of Astronomy *Pasadena, CA*

- Teaching: Ay105, Ay122a, Ay/Ge198, Ay141, Ay142, Ay30.
- Astronomy Colloquium committee.
- Graduate student admission committee.
- Postdoctoral Prize fellowships in experimental physics or astrophysics selection committee.
- Caltech Optical Observatories Time Allocation Committee.
- PI of the Exoplanet Technology Laboratory.
- PI of the High Contrast Spectroscopy Testbed for Segmented Telescopes.
- PI of the Keck Planet Imager and Characterizer (KPIC).
- PI of the Palomar WIRC+Pol infrared integral wide-field spectro-polarimeter.
- PI of HISPEC, a new diffraction-limited high-resolution infrared spectrograph concept for Keck.

- PI of MODHIS, a new diffraction-limited high-resolution infrared spectrograph concept for TMT.
- PI of the Keck NIRC2 upgrade.
- Co-I of the TMT-Planetary Systems Imager.
- Co-I of PARVI, a precision radial velocity infrared facility for Palomar.
- Faculty sponsor for the Cahill Rooftop Observatory, used for teaching and outreach activities.

Jet Propulsion Laboratory - California Institute of Technology
Senior Research Scientist

Feb 2015 - Present
Pasadena, CA

- WFIRST CGI Independent Review Team.
- HabEx Science and Technology Definition Team.
- HabEx Coronagraph Technology Working Group lead.
- LUVOIR Coronagraph Instrument Working Group.
- Exoplanet Exploration Program Analysis Group (ExoPAG) Executive Committee.
- Co-lead of the ExoPAG Study Analysis Group (SAG) 19: Exoplanet Imaging Signal Detection Theory and Rigorous Contrast Metrics
- JPL's Exoplanetary Science Initiative Steering Committee.

European Southern Observatory (ESO)
Operations Staff Astronomer at the Very Large Telescope

Apr 2011 - Jan 2015
Paranal Observatory, Chile

- ESO Faculty - Assistant Astronomer.
- VLT science operations (UT3 and UT4).
- Adaptive Optics Scientist/Coordinator for the VLT.
- SPHERE (extreme AO planet finder) Paranal Instrument Scientist.
- VISIR (mid-infrared imager and spectrograph) Deputy Instrument Scientist.
- NACO (AO-fed infrared camera and spectrograph) Deputy Instrument Scientist.
- 420 observing nights on the VLT.
- Night Shift Coordinator at Paranal Observatory.

Jet Propulsion Laboratory - California Institute of Technology
Affiliate Research Scientist

Apr 2011 - Jan 2015
Pasadena, CA

- Vector vortex coronagraph technology development.
- Vortex explorer & probe-scale mission concept studies.
- Key collaborator to the Palomar Stellar Double Coronagraph.

Jet Propulsion Laboratory - California Institute of Technology
Research Scientist

Oct 2009 - Mar 2011
Pasadena, CA

- Vector vortex coronagraph technology development.
- Imaging survey of a sample of dusty stars with VLT, Palomar, Keck, & Gemini.
- Modeling of Palomar P1640 and Stellar Double Coronagraph, space-based coronagraphs.

Jet Propulsion Laboratory - California Institute of Technology
NASA postdoctoral fellow

Oct 2007 - Oct 2009
Pasadena, CA

- Imaging of exoplanets, brown dwarfs and disks with VLT, Palomar, Keck, & Gemini.
- Vector vortex coronagraph technology development.
- Palomar Well-Corrected Subaperture extreme Adaptive Optics experiment.
- Fiber nuller experiment at Palomar (PFN).

Institut d'Astrophysique et de Géophysique, University of Liège
Postdoctoral research position

Oct 2006 - Sep 2009
Liège, Belgium

- Achromatic phase shifter for infrared nulling interferometry (Darwin, European Space Agency).
- Development of the Annular Groove Phase Mask/Vector Vortex Coronagraph.
- Promotion of science education and master in space sciences.

Institut d'Astrophysique Spatiale d'Orsay Sep 2003 - Apr 2004
Marie Curie Fellow Orsay, France

- Achromatic phase shifter for infrared nulling interferometry (Darwin, European Space Agency).

Observatoire de Paris-Meudon Sep 2002 - Apr 2003
Marie Curie Fellow Paris, France

- Development of the four-quadrant phase mask coronagraph for JWST-MIRI and VLT-SPHERE.

Institut d'Astrophysique et de Géophysique, University of Liège Oct 2002 - Sep 2006
FRIA Research Fellow Liège, Belgium

- Thesis: *Subwavelength gratings for extrasolar planetary system detection and characterization.*

STUDENTS AND POSTDOCS

Postdocs (current or incoming in boldface):

Jason Wang (51 Peg b fellow), Kevin Fogarty (Experimental astrophysics Prize fellow), Jean-Baptiste Ruffio (Experimental astrophysics Prize fellow, Fall 2019), Bin Ren (Caltech postdoc, Fall 2019), Jacques-Robert Delorme (Caltech postdoc), Maxwell Millar-Blanchaer (Hubble fellow at JPL, Experimental astrophysics Prize fellow, Fall 2019), Taichi Uyama (visiting postdoc at IPAC), Marie Ygouf (IPAC postdoc), Carl Coker (NASA postdoc at JPL), Ricky Nilsson (Caltech postdoc, now data scientist at Terry Therapeutics), Elodie Choquet (Hubble fellow at Caltech, now CNRS researcher at LAM), Garreth Ruane (NSF fellow at Caltech, now Optical Engineer at JPL), Rahul Patel (IPAC postdoc now Research Analyst at the Center for Naval Analyses), Ji Wang (Caltech postdoc, now Assistant Professor at OSU), Tiffany Meshkat (ESI postdoc at JPL, now staff scientist at IPAC)

Graduate students (current in boldface):

Advisor: **Jackie Pezzato (Caltech Astronomy), Daniel Echeverri (Caltech Physics), Kaew Tinyanont (Caltech Astronomy), Jorge Llop (Caltech Physics)**

Co-Advisor: **Nicole Wallack (Caltech GPS), Rebecca Jensen-Clem (Caltech Astronomy, 2017, now Miller fellow at UC Berkeley, Assistant Professor at UCSC, Winter 2020), Henry Ngo (Caltech GPS, 2017, now Plaskett fellow at University of Victoria), Michael Bottom (Caltech Astronomy, 2016, now at Optical Engineer at JPL, Assistant Professor at UH, Fall 2019), Marta Bryan (Caltech Astronomy, now 51 Peg b fellow at UC Berkeley), Brunella Carlomagno (ULg), Valentin Christiaens (U. Chile/ULg, 2018), Carlos Gomez (ULg, 2017), Garreth Ruane (RIT, 2016), Julien Milli (IPAG/ESO, 2014), Pierre Piron (ULg, 2014), Christian Delacroix (ULg, 2013), Charles Hanot (ULg, 2011)**

TEACHING EXPERIENCE

Ay/Ge198: Extrasolar planets , Caltech	2016 - Present
Ay105: Optical Astronomy Instrumentation Lab , Caltech	2015 - Present
Ay122a: Astronomical Measurements and Instrumentation , Caltech	2015 - Present
Ay141: Research Conference in Astronomy , Caltech	2015 - Present
Ay142: Research in Astronomy , Caltech	2015 - Present
Ay30: Introduction to Modern Research , Caltech	2015 - Present

Invited lecturer:

- Aerospace and Electronic Systems Society (AESS), Buena Ventura Section: “Imaging Other Worlds”, Thousand Oaks (CA) , 2019
- 9th Annual Fu Physics Salon: “Imaging and Remote Sensing of Other Worlds”, Los Altos (CA), 2018
- Earnest C. Watson Lecture Series (Caltech): “Imaging and Remote Sensing of Other Worlds”, Caltech, Pasadena (CA), 2017
- Sagan workshop (Caltech): “Survey of exoplanet direct imaging techniques and results”, Caltech, Pasadena (CA), 2016
- Caltech’s 79th annual alumni seminar day: “Imaging other worlds”, Caltech, Pasadena (CA), 2016
- AO round table (UCLA): “International landscapes of adaptive optics”, UCLA, Los Angeles (CA), 2016
- Image Science in Sequence: “High-Contrast Imaging of Extra-Solar Planets with Machine-Learning Techniques”, Gordon Research Conference, Boston (MA), 2016
- Santander international Summer Schools for Doctorate Students (Heidelberg University) “Reaching the limits of the sky, astronomical instrumentation in the 21st century”: “The VLT exoplanet imager SPHERE”, Santiago (Chile), 2014
- Santander international Summer Schools for Doctorate Students (Heidelberg University) “Reaching the limits of the sky, astronomical instrumentation in the 21st century”: “Adaptive optics: deformable mirrors”, Santiago (Chile), 2014
- 2014 Sagan Exoplanet Summer Workshop, Caltech, Pasadena (CA), 2014 & 2016
- “Temas de Astrofísica 2013b”, Pontificia Univ. Católica de Chile, Santiago (Chile), 2013
- “Techniques de l’imagerie a grande dynamique au sol et dans l’espace”, University of Liège (Belgium), 2008
- “Architectures optiques du futur”, SupOptique, Saint-Etienne (France), 2006-2008

Teaching Assistant (Prof. J. Surdej):

Astronomical observations at Observatoire de Haute-Provence (France), 2003-2007

AWARDS, HONORS AND FELLOWSHIPS

NASA Agency Honor and Group Achievement Awards for the HabEx Science and Technology Definition team	2019
NASA Agency Honor and Group Achievement Awards for the WFIRST Independent External Technical/Management/Cost Review	2018
ESO Exceptional Performance Award	2013 & 2014
NASA Group Achievement Award, High Contrast/Resolution Exoplanet Imaging Team	2011
JPL Team Award for outstanding contributions to the Exoplanet Coronagraph Technology Group	2010
NASA Postdoctoral Fellowship at JPL-Caltech	2007
Marie Curie Research Fellowship	2002
FRIA (Belgian National Fund for Research in Industry and Agriculture) Graduate Fellowship	2002
Jean Genard Award (for the diploma thesis in engineering University of Liège)	2002
Bourse Pisart (awarded to students in engineering at the University of Liège)	2001

PROFESSIONAL SERVICES

Keck AO Future Study Group	2019-present
National Academies of Sciences, Exoplanet Science Strategy Committee	2018

WFIRST Independent External Technical/Cost/Management Review (WIETR)	2017
WFIRST CGI Independent Review Team	2018 - present
HabEx Science and Technology Definition Team (STDT)	2016 - Present
Caltech Astronomy Colloquium committee	2017 - Present
Caltech Graduate student admission committee	2015 - 2016
Caltech Postdoctoral Prize fellowships in experimental physics or astrophysics selection committee	2015 - 2017
Caltech Optical Observatories Time Allocation Committee	2015 - 2017
Chair of ExoPAG Study Analysis Group 19	
Exoplanet Imaging Signal Detection Theory and Rigorous Contrast Metrics	2016 - 2019
Exoplanet Exploration Program Analysis Group (ExoPAG) Executive Committee	2015 - 2019
Breakthrough Watch Committee	2015 - Present
Adaptive Optics Scientist/Coordinator for Paranal observatory (ESO)	2014
ESO's E-ELT Planetary Camera and Spectrograph (PCS) Technology development roadmap with M. Kasper and C. Véraud.	2013
ESO's Instruments Technical Readiness Review, and Provisional Acceptance in Europe Board member	2013-2014
ESO's Fellow and Student Selection Committee (FSCC) Jury member	2013
ESO's Director Discretionary Time (DDT) Committee member	2013-2015
National Science Foundation (NSF) ATI panel member	confidential
Agence National de la Recherche (ANR, France) Proposal reviewer	confidential
Chilean National fund for scientific & technological development (CONICYT/FONDECYT) Proposal reviewer	confidential
ESO's NACO & VISIR technical feasibility Reviewer	2011 - 2015
Referee for Nature, Science, ApJ, AJ, A&A, MNRAS, JATIS, PASP	2006 - Present
Member of the International Astronomical Union (IAU), divisions B/F/G	2012 - Present
Active member of SPIE, the International Society for Optics and Photonics	2011 - Present
European Cooperation in Technology (COST), member of the "Polarisation as a tool to study the solar system and beyond" network	2012 - 2015
ESO Chile's Adaptive Optics Group	2011-2015
ESO Chile's Direct Imaging Group	2013-2015
Science promoter at student fairs for the University of Liège	2006 - 2007
Public outreach: planetarium animation, public lectures	2003 - Present

Local / Scientific Organizing Committee / Chair:

- “Keck Science Meeting 2018 (SOC)”, Caltech Sep 2018
- “ExSoCal 2018 (SOC)”, Caltech Sep 2018
- “Combining high-resolution spectroscopy and high-contrast imaging for exoplanet characterization”, Caltech (CA), June 2018
- “Keck Institute of Space Studies: Technology Requirements to Operate at and Utilize the Solar Gravity Lens for Exoplanet Imaging”, Caltech May 2018
- “SPIE Photonics West: Techniques and Instrumentation for Detection of Exoplanets”, San Diego (CA), 2011 - Present
- “Keck Institute of Space Studies: Exoplanet Imaging and Characterization: Coherent Differential Imaging and Signal Detection Statistics”, Caltech Aug 2016 and Nov 2016
- “1st international vortex workshop”, Caltech Aug 2016
- “Keck Science Meeting 2016 (SOC)”, Caltech Sep 2016
- “ExSoCal 2015 (SOC)”, Caltech Sep 2015
- “MAD workshop: Protoplanetary disks and the planets they form (SOC)”, Santiago (Chile) Nov 2014
- “MAD workshop: Protoplanetary disks and the planets they form (SOC)”, Santiago (Chile) Nov 2014
- “SPHERE one-day workshop (organizer)”, Santiago (Chile) Oct 2014
- “Combining Coronagraphs & Wavefront Control” at Lorentz Center (SOC), Leiden (The Netherlands) Oct 2014
- “Thirty years of beta Pic and debris disk studies” at Paris Observatory (SOC), Paris (France) Sep 2014
- “Polarimetric Techniques & Technology” at Lorentz Center (SOC), Leiden (The Netherlands) Mar 2014
- SPIE Photonics West 2013 - “Techniques and Instrumentation for Detection of Exoplanets VI” (SOC), San Diego (CA) Aug 2013
- IAU symposium 299, “Exploring the formation and evolution of planetary systems” (SOC), Victoria (Canada) Jun 2013
- Observing Planetary Systems II (Chair) & High Contrast Imaging & Spectroscopy (LOC), Santiago (Chile) Mar 2012
- Exoplanet forum (Chair), Pasadena (CA) May 2008
- Joint European and National Astronomy Meeting (JENAM) “Distant Worlds” (LOC, Chair), Liège (Belgium) Jul 2005

RESEARCH GRANTS

(over \$25M over the past 10 years as PI, co-PI, or co-I)

Science verification and exploitation of the Keck Planet Imager and Characterizer System (KPIC)

2019 Heising Simons Foundation PI

Optimal spectrograph and wavefront control architectures for high-contrast exoplanet characterization

2019 NASA ROSES SAT-TDEM PI

Detection and Characterization of Potentially Earth-Like Extrasolar Planets

2019 Simons Foundation co-I

Enabling Exoplanet Characterization Within the Diffraction Limit with Vortex Fiber Nulling	
2019 NASA ASTRO19 FINESST (Caltech grad student: D. Echeverri)	PI
Direct imaging studies of the birth and early evolution of giant planets	
2018 NASA ROSES XRP	PI
Weather Reports for Brown Dwarfs with High-Precision Spectro-Polarimetry at Palomar	
2018 NSF AST AAG	PI
Vortex Coronagraph High Contrast Demonstrations	
2018 NASA ROSES SAT-TDEM	Institutional PI
Advanced vortex phase mask and techniques	
2018 NASA ROSES APRA	Institutional PI
Vortex Fiber Nulling for targeted exoplanet characterization within the diffraction limit	
2018 JPL RTD	PI
Extrasolar weather with ultra-precision spectro-polarimetry	
2018 JPL/Caltech PDF	PI
Astrophysics enabled by Keck All Sky Precision Adaptive Optics	
2018 NSF AST MSIP	co-PI
Segmented Coronagraph Design Analysis - Vortex Coronagraph III	
2018 NASA Exoplanet Exploration Program	co-PI
NEAR project	
2017 Breakthrough initiatives	Institutional PI
Development of a Fast and Flexible Adaptive Optics Controller	
2017 NSF MRI	co-PI
Active Speckle Control and Fast Speckle Statistics to Drastically Improve the Contrast Ratio of Exoplanet Direct Imaging	
2017 NSF AST ATI	co-PI
Exoplanet Science Enabled by Infrared WFS with Keck Adaptive Optics	
2016 NSF AST ATI	co-PI
Keck Planet Imager and Characterizer (KPIC) phase II - Coronagraph	
2017 Heising Simons Foundation	PI
Segmented Coronagraph Design Analysis - Vortex Coronagraph II	
2017 NASA Exoplanet Exploration Program	co-PI
Segmented Coronagraph Design Analysis - Vortex Coronagraph I	
2016 NASA Exoplanet Exploration Program	co-PI
Keck Planet Imager and Characterizer (KPIC) phase I	
2016 Heising Simons Foundation	PI
Exoplanet Science Enabled by Infrared WFS with Keck Adaptive Optics	
2016 NSF AST ATI	co-PI
Development and Demonstration of Game-Changing WFS Technology	
2016 JPL/Caltech PDF	co-PI
Weather Reports for Exoplanets and Brown Dwarfs with Spectro-Polarimetry	
2015 Mt Cuba foundation	PI

Broadband light rejection with the optical vortex coronagraph 2015 NASA ROSES SAT-TDEM	co-I
Taking extrasolar planet imaging to a new level with vector vortex coronagraphy 2013 European Research Council starting grant	co-I
Imaging exoplanets in the mid-infrared with AGPM coronagraphs 2013 Concerted Research Actions 2013, University of Liège	co-I
Planetary Imaging Concept Testbed Using a Recoverable Experiment - Coronagraph (PICTURE-C) 2013 NASA ROSES APRA	Collaborator
Demonstrations of Deep Starlight Rejection with a Vortex Coronagraph 2011 NASA ROSES SAT-TDEM	co-I
Exoplanet Direct Imaging With On-Axis Segmented apertures in Space 2011 NASA ROSES APRA	co-I
High Contrast Observations Close to Stars with Vortex Coronagraphy 2011 NASA ROSES Origins	co-I
Development of vortex phase mask coronagraphic techniques for exoplanet detection 2009 NASA ROSES APRA	co-I
Assessing the performance limits of internal coronagraphs through end-to-end modeling 2009 NASA ROSES SAT-TDEM	co-I
Advanced hybrid Lyot coronagraph technology for exoplanet missions 2009 NASA ROSES SAT-TDEM	co-I
High Contrast Coronagraphic Observations of Nearby Stars 2008 NASA ROSES Origins	co-I
Development of a Phased-Array Coronagraph for Direct Exoplanet Detection 2008 NASA ROSES APRA	co-I
ACCESS - A science and engineering assessment of space coronagraph concepts for the direct imaging and spectroscopy of exoplanetary systems 2007 NASA Astrophysics Strategic Missions Concept Studies (ASMCS)	co-I
Fabrication of a AGPM vortex coronagraph 2006 Belgian National Fund for Research grant (FRFC)	co-I
Lithographic Manufacturing of ZOGs for innovative APS (DARWIN) 2005 GSTP-ESA	co-I

INVITED TALKS

<i>TMT-MODHIS, High Dispersion Coronagraphy and the VFN concept</i> GMT high contrast imaging workshop, GMT	May 2019
<i>Diffraction-limited high-resolution infrared spectroscopy</i> LAM, Marseille (France)	Dec 2018
<i>Characterizing Exoplanets with High Dispersion Coronagraphy on TMT</i> Thirty Minute Talking Science, TIO	Sep 2018
<i>Exploring exoplanetary systems with direct remote sensing</i> UCB Astronomy Colloquium, UCB	April 2018

Deep exploration of exoplanetary systems with direct imaging and spectroscopy
UCLA Planetary Science Seminar, UCLA Feb 2018

Direct remote sensing of giant exoplanets: where and how to look
Exoplanets and Planet Formation, T.-D. Lee Institute and Shanghai JiaoTong University, Shanghai
(China) Dec 2017

Imaging Habitable Worlds around Other Stars
Physics & Astronomy colloquium, Northwestern University Apr 2016

Implementing exoplanet direct detection and mapping capabilities at Keck and Palomar Observatories
GPS division seminar, Caltech Aug 2015

Complementarity and limitations of coronagraphy and interferometry for the detection of faint companions at small angles
Quantum Astronomy and Stellar Imaging, Sydney Aug 2015

High contrast imaging technologies
In the Spirit of Lyot, Montreal (Canada) Jun 2015

Introduction to high contrast imaging
MAD workshop: Protoplanetary disks and the planets they form, Santiago (Chile) Nov 2014

Planetary system formation and evolution in the golden age of high contrast imaging
Universidad Diego Portales, Santiago (Chile) Apr 2014

Planetary system formation and evolution in the golden age of high contrast imaging
STScI Colloquium, Baltimore (MD) Mar 2014

Extra-solar planetary system formation and evolution in the golden age of high contrast imaging
Caltech Astronomy Colloquium, Pasadena (CA) Jan 2014

Review of small-angle coronagraphic techniques in the wake of ground-based second-generation adaptive optics systems
SPIE invited talk, Amsterdam (Netherlands) Jul 2012

High Contrast Imaging and Coronagraphy at ESO
Jet Propulsion Laboratory, Pasadena (CA) Mar 2012

State of the art and perspectives in Coronagraphy
High Contrast Imaging and Spectroscopy workshop, ESO Vitacura, Santiago (Chile) Mar 2012

Using phase-mask coronagraphy in the Extreme-AO regime at Palomar to image exoplanets: lessons learned
AO group talk, ESO Garching (Germany) Oct 2011

Taking the vector vortex coronagraph to the next level for ground- and space-based exoplanet imaging instruments: review of technology developments in the USA, Japan, and Europe
SPIE invited talk, San Diego (CA) Aug 2011

Imaging extra-solar planetary systems with a vortex coronagraph
University of California Berkeley (CA) Apr 2010

Phase-mask coronagraphy at JPL
Seminar at Herzberg Institute of Astrophysics (HIA), Victoria (Canada) Mar 2010

Developing phase-mask coronagraphy at JPL
NExSci Exoplanet talk series, Caltech Feb 2009

Phase-Mask Coronagraphy: Scientific Results and Perspectives,
Exoplanet Science Colloquium Series, Jet Propulsion Laboratory, Pasadena (CA) May 2008

<i>Annular Groove Phase-Mask coronagraph (AGPM) for differential polarimetric imaging</i> Seminar at University College of London (UCL), London (UK)	May 2007
<i>Les vortex optiques à base de réseaux sublambdas</i> Seminar at LAOG, Grenoble (France)	Apr 2007
<i>Observational astrophysics and the search for life around other stars</i> Invited talk at the Astrobiology and Habitability workshop, SCKCEN Brussels (Belgium)	Jun 2006
<i>Perspectives for next generation ground- and spaced-based interferometers</i> Plenary talk at <i>Distant Worlds</i> , JENAM annual meeting, Liège (Belgium)	Jul 2005
<i>Diamond subwavelength gratings for an achromatic four-quadrant phase-mask coronagraph</i> Seminar at the Technology department of Uppsala University, Uppsala (Sweden)	Feb 2005
<i>Etude d'un coronographe 4 quadrants au moyen de l'optique diffractive</i> Seminar of the Instrumental Research Group at Observatoire de Meudon, Paris	Apr 2002

PRESS RELEASES, FEATURE STORIES

Exoplanet Stepping Stones http://keckobservatory.org/hr8799c/	2018
W. M. Keck Observatory Awarded NSF Grant To Develop Next-Generation Adaptive Optics System 2018 http://keckobservatory.org/kapa/	
Hello Darkness https://www.news.ucsb.edu/2018/018769/hello-darkness	2018
NAS Exoplanet Science Strategy Report http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=25187	2018
Inventing Tools for Detecting Life Elsewhere https://www.caltech.edu/about/news/inventing-tools-detecting-life-elsewhere-54515	2017
Giant Exoplanet Hunters: Look for Debris Disks http://www.caltech.edu/news/jpl-news-giant-exoplanet-hunters-look-debris-disks-80041 https://www.jpl.nasa.gov/news/news.php?feature=6970	2017
Hands-on Experience for Tomorrow's Astronomers https://breakthrough.caltech.edu/story/hands-experience-tomorrows-astronomers/	2016
Keck Observatory's New Planet Imager Delivers First Science https://www.caltech.edu/about/news/keck-observatorys-new-planet-imager-delivers-first-science-53770	2015
The Strange Case of the Missing Dwarf: New SPHERE instrument shows its power https://www.eso.org/public/news/eso1506/	2015
Mysterious Ripples Found Racing Through Planet-forming Disc https://www.spacetelescope.org/news/heic1521/ https://www.eso.org/public/news/eso1538/	2014
ALMA Sheds Light on Planet-Forming Gas Streams https://www.eso.org/public/news/eso1301/	2013
Small, Ground-Based Telescope Images Three Exoplanets https://www.jpl.nasa.gov/news/news.php?feature=2563	2010

SELECTED PUBLICATIONS

1. *Deep Exploration of Epsilon Eridani with Keck Ms-band Vortex Coronagraphy and Radial Velocities: Mass and Orbital Parameters of the Giant Exoplanet*, **Mawet D.**, Hirsch L., Lee E. J., Ruffio J.-B., Bottom M., Fulton B. J., Absil O., Beichman C., Bowler B., Bryan M., Choquet E., Ciardi D., Christiaens V., Defrre D., Gomez Gonzalez C. A., Howard A. W., Huby E., Isaacson H., Jensen-Clem R., Kosiarek M., Marcy G., Meshkat T., Petigura E., Reggiani M., Ruane G., Serabyn E., Sinukoff E., Wang J., Weiss L., Ygouf M., 2019, *The Astronomical Journal* 157, 33.
2. *Observing Exoplanets with High-dispersion Coronagraphy. II. Demonstration of an Active Single-mode Fiber Injection Unit*, **Mawet D.**, Ruane G., Xuan W., Echeverri D., Klimovich N., Randolph M., Fucik J., Wallace J. K., Wang J., Vasisht G., Dekany R., Mennesson B., Choquet E., Delorme J.-R., Serabyn E., 2017, *The Astrophysical Journal* 838, 92.
3. *A Direct Imaging Survey of Spitzer-detected Debris Disks: Occurrence of Giant Planets in Dusty Systems*, Meshkat T., **Mawet D.**, Bryan M. L., Hinkley S., Bowler B. P., Stapelfeldt K. R., Batygin K., Padgett D., Morales F. Y., Serabyn E., Christiaens V., Brandt T. D., Wahhaj Z., 2017, *The Astronomical Journal* 154, 245.
4. *Fundamental Limitations of High Contrast Imaging Set by Small Sample Statistics*, **Mawet D.**, Milli J., Wahhaj Z., Pelat D., Absil O., Delacroix C., Boccaletti A., Kasper M., Kenworthy M., Marois C., Mennesson B., Pueyo L., 2014, *The Astrophysical Journal* 792, 97-
5. *Annular Groove Phase Mask Coronagraph*, **Mawet D.**, Riaud P., Absil O., Surdej J., 2005, *The Astrophysical Journal* 633, 1191-1200

1. *Separating extended disc features from the protoplanet in PDS 70 using VLT/SINFONI*, Christiaens V., Casassus S., Absil O., Cantalloube F., Gomez Gonzalez C., Girard J., Ramirez R., Pairet B., Salinas V., Price D. J., Pinte C., Quanz S. P., Jordn A., **Mawet D.**, Wahhaj Z., 2019, Monthly Notices of the Royal Astronomical Society 486, 5819-5837.
2. *Discovery of a White Dwarf Companion to HD 159062*, Hirsch L. A., Ciardi D. R., Howard A. W., Marcy G. W., Ruane G., Gonzalez E., Blunt S., Crepp J. R., Fulton B. J., Isaacson H., Kosiarek M., **Mawet D.**, Sinukoff E., Weiss L., 2019, The Astrophysical Journal 878, 50.
3. *Vortex fiber nulling for exoplanet observations I Experimental demonstration in monochromatic light*, Echeverri D., Ruane G., Jovanovic N., **Mawet D.**, Levraud N., 2019, Optics Letters 44, 2204.
4. *Vector vortex coronagraphy for exoplanet detection with spatially variant diffractive waveplates*, Serabyn E., Prada C. M., Chen P., **Mawet D.**, 2019, Journal of the Optical Society of America B Optical Physics 36, D13.
5. *Supernova 2017eaw: Molecule and Dust Formation from Infrared Observations*, Tinyanont S., Kasliwal M. M., Krafton K., Lau R., Rho J., Leonard D. C., De K., Jencson J., **Mawet D.**, Millar-Blanchaer M., Nilsson R., Yan L., Gehrz R. D., Helou G., Van Dyk S. D., Serabyn E., Fox O. D., Clayton G., 2019, The Astrophysical Journal 873, 127.
6. *Reference Star Differential Imaging of Close-in Companions and Circumstellar Disks with the NIRC2 Vortex Coronagraph at the W. M. Keck Observatory*, Ruane G., Ngo H., **Mawet D.**, Absil O., Choquet ., Cook T., Gomez Gonzalez C., Huby E., Matthews K., Meshkat T., Reggiani M., Serabyn E., Wallack N., Xuan W. J., 2019, The Astronomical Journal 157, 118.
7. *WIRC+Pol: A Low-resolution Near-infrared Spectropolarimeter*, Tinyanont S., Millar-Blanchaer M. A., Nilsson R., **Mawet D.**, Knutson H., Kataria T., Vasisht G., Henderson C., Matthews K., Serabyn E., Milburn J. W., Hale D., Smith R., Vissapragada S., Santos L. D., Kekas J., Escuti M. J., 2019, Publications of the Astronomical Society of the Pacific 131, 025001.
8. *Investigating the presence of two belts in the HD 15115 system*, Engler N., Boccaletti A., Schmid H. M., Milli J., Augereau J.-C., Mazoyer J., Maire A.-L., Henning T., Avenhaus H., Baudoz P., Feldt M., Galicher R., Hinkley S., Lagrange A.-M., **Mawet D.**, Olofsson J., Pantin E., Perrot C., Stapelfeldt K., 2019, Astronomy and Astrophysics 622, A192.
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