

Élodie Choquet

Associate Astronomer

Laboratoire d'Astrophysique de Marseille
38 Rue Frédéric Joliot Curie
13013 Marseille FRANCE
☎ +33 495-04-41-16
✉ elodie.choquet@lam.fr

Research interests

Extrasolar systems, Exoplanet formation, Exoplanetary systems evolution.

Circumstellar disks, Debris disks properties, Protoplanetary disks, Planet-disk interactions.

High angular resolution instrumentation, High-contrast imaging technics, Image processing methods, Wavefront sensing and control, Interferometry.

Research Positions

- 2019 – now **Associate Astronomer**, Laboratoire d'Astrophysique de Marseille, Aix Marseille Université, France.
2018 **Hubble Fellow**, California Institute of Technology, USA.
2016 – 2017 **Hubble Fellow**, Jet Propulsion Laboratory, USA.
2013 – 2015 **Postdoctoral Researcher**, Space Telescope Science Institute, USA.
2009 – 2012 **Ph.D Student**, Laboratoire d'Études Spatiales et d'Instrumentation en Astrophysique, France.

Education

- 2013 **Ph.D in Astronomy and Astrophysics**, Université Paris 7, France.
2009 **M.Sc in Optical Science**, Institut d'Optique Graduate School, France.
2009 **M.Sc in Optics, Image, and Vision**, Université Jean Monnet, France.
2007 **B.Sc in Fundamental Physics**, Université Paris-Sud 11, France.

Fellowships, Grants, Awards

- 2022 **ERC Consolidator grant**, European Research Council (2M€).
2019 **PICS grant**, CNRS (18k€).
2018 **HST grant**, NASA (\$535k).
2017 **Keck grant**, NASA (\$13k).
2017 **Keck grant**, NASA (\$11k).
2015 **Hubble Fellowship**, NASA (\$333k).
2015 **HST grant**, NASA (\$51k).
2014 **Team Achievement Award**, STScI.
Jointly with R. Soummer's group for the creation of the R. B. Makidon Optics Lab.
2013 **Humboldt fellowship**, Humboldt Foundation (declined).
2009 **Graduate student grant**, DGA, CNRS.

Teaching activities

- 2019 – now **Lecturer**, Aix Marseille Université, France.
 - 2021-now: *Advanced methods for optical instrumentation* (M.Sc Europhotonics)
 - 2020: Guest Lecturer: *High-contrast imaging astronomy* (Ph.D Astronomy, [HAR School](#))
 - 2019-now: *Instrument calibration and Image correction* (M.Sc Signal and Image processing)
 - 2019-2022: *Initiation to the experimental method* (B.Sc Physics)
2014 **Teaching Assistant**, Caltech, USA, [Sagan Exoplanet Summer School](#).
2009 – 2012 **Teaching Assistant**, Observatoire de Paris, France.

PhD students & Postdocs

- 2020 – now **Chen Xie**, PhD student, Aix Marseille Université, Co-supervised at 50% with A. Vigan.
2019– 2022 **Bin Ren**, Postdoc, Caltech.

Professional Services

- 2021 – now President of the ASHRA national Scientific Committee.
- 2021 – now Member of the Technological Facilities Board for the Institut Origine Marseille
- 2020 – now Member of the national Exoplanet Committee (ASHRA representative).
- 2020 – now Member of the ASHRA national Scientific Committee.
- 2019 – now Member of the LAM Scientific Committee.

Commissions of Trust

- 2022 External Reviewer, HST proposals, Cycle 30.
- 2021 Review panel member JWST proposals, Cycle 1.
- 2020 PhD examiner for R. Laugier (OCA / Laboratoire Lagrange, Nice).
- 2019 – 2020 Review panel member, ESA **Voyage 2050** Science Program, Topical Team 3.
- 2017 – 2019 External Reviewer, HST proposals, Cycles 24, 25, 26, 27.
- 2017 – now Referee for ApJ and A&A.
- 2015 – 2017 Reviewer for the **NASA Earth and Space Science Fellowship** Graduate program.

Memberships of Scientific Societies

- 2021 – now Member of the International Astronomical Union (IAU)
- 2020 – now Member of the Société Française d’Astronomie et d’Astrophysique (SF2A)
- 2020 – now Member of the European Astronomical Society (EAS)
- 2013 – 2018 Member of the American Astronomical Society (AAS)
- 2016 – now Member of the **ExoPAG** Study Analysis Group 19.
- 2013 – 2015 Member of the ExoPAG Study Analysis Group 9.

Observing Programs

Strategic Co-I

2017 **JWST strategic Cycle 1 programs.**

ERS program, 55h (PI: S. Hinkley): É. Choquet co-lead of the Disk Imaging Package (25h).
GTO program, 60h (PI: M. Ressler): É. Choquet in charge of the exoplanets imaging part (19h).

Programs as PI

2020 **HST GO program**, 16 orbits.

Witnessing giant planet formation in action: a unique view of the emblematic PDS 70 system with HST

2020A **ESO VLTI program**, 12h.

Imaging the inner regions of the intriguing AU Mic extrasolar system

2018B **Caltech Keck program**, 0.5 night.

Giant Planets & Brown Dwarfs in the Pleiades

2017 **HST GO program**, 39 orbits.

Debris Disk Characterization through Spectral Types: Deep Visible-Light Imaging of 9 Systems

2017B **ESO VLT program**, 3h.

Unambiguous Water-Ice Identification in HD 32297’s debris disk

2017B **NASA Keck program**, 1 night.

Follow-up of Planet and Brown Dwarf Candidates Discovered in the NICMOS Archive

2017A **NASA Keck program**, 1 night.

Follow-up of Planet and Brown Dwarf Candidates Discovered in the NICMOS Archive

2014 **HST GO program**, 4 orbits.

STIS coronagraphy of a debris disk newly discovered around a young M dwarf

2014 **ESO VLTI program**, 1 night.

Observing the close environment of the high-mass X-ray binary Vela X-1 in the mid-IR

2012 **NOAO CHARA program**, 6 nights.

Systematic analysis of the accretion process in high-mass binaries

Communications

Invited Talks

- Jan. 2018 AAS conference, *JWST Town Hall*, National Harbor.
- Nov. 2017 *Sagan/Michelson Fellows Symposium*, Caltech.
- Mar. 2017 *Hubble Fellow Symposium*, STScI ([webcast](#)).
- Nov. 2016 Invited Review at the *High Contrast Imaging in Space* Conference, STScI ([webcast](#)).
- Mar. 2016 *Hubble Fellow Symposium*, STScI ([webcast](#)).

Scientific animation

- 2021 SOC co-chair, *Symposium S6*, EAS annual meeting (virtual meeting).
- 2020 Co-convener, *EXO9* Session, *Europlanet Science Congress* (virtual meeting).
- 2020 SOC member, *Symposium S1*, EAS annual meeting (virtual meeting).
- 2019 SOC member, *AO4Astro* Workshop (Marseille, France).
- 2018 SOC member, *Pasadena Astronomy Postdoc Retreat* (Lake Arrowhead, USA).
- 2017 SOC member, *ExSoCal* conference (Pasadena, USA).
- 2014 SOC member, *Habitable Worlds Across Time and Space* symposium (Baltimore, USA).

Arthur Vigan

Chargé de Recherche au CNRS
Laboratoire d'Astrophysique de Marseille

ORCID : [0000-0002-5902-7828](https://orcid.org/0000-0002-5902-7828)

Tel : +33.4.95.04.41.65

Date of birth: 17/08/1983



Groupe Systèmes Planétaires
Groupe R&D en instrumentation

arthur.vigan@lam.fr
<http://astro.vigan.fr/>

EDUCATION

- 2018** **Habilitation à Diriger des Recherches (HDR)**, Aix-Marseille Université
- 2010** **PhD Thesis**, Aix-Marseille Université. Supervision : Maud Langlois & Claire Moutou
- 2006 Master "Optique, Vision, Signal", Université Jean Monnet, St Etienne
- 2006 Optical engineering degree, Institut d'Optique *Graduate School*, Orsay

CURRENT AND PREVIOUS POSITIONS

- 2013 – today** **CRCN at CNRS, Laboratoire d'Astrophysique de Marseille**
- 2015** **Operation Staff Astronomer, European Southern Observatory, Chile**
- 2012 – 2013 Postdoctoral position, Laboratoire d'Astrophysique de Marseille
- 2012 Invited researcher CRAL (Lyon, France) for one month
- 2010 – 2012 *Associate Research Fellow*, University of Exeter (UK)

RESEARCH GRANTS

2020-22	PI	INSU-CSAA : Building HiRISE	75 k€
2017	PI	ERC StG HiRISE : coupling SPHERE and CRIRES+ at the VLT	1500 k€
2017	PI	LAM : incentive funding	4 k€
2014	Co-I	CNES : postdoctoral funding for Roxanne Ligi	56 k€
2014	PI	Région PACA : ASOREX project on wavefront control	60 k€
2013	PI	LAM : manufacturing of the SLLC apodiser for SPHERE	10 k€
Regular	Co-I	Grants from French national programs	several k€/an

AWARDS AND DISTINCTIONS

- 2021 CNRS Bronze Medal (national award)
- 2014 CNRS prize for scientific excellence
- 2015 Research grant from the City of Marseille

INVITED SEMINARS AND PRESENTATIONS

More than 40 oral contributions in conference, workshops or seminars in various institutes, including a dozen invited contributions.

Main invited contributions: Uppsala University, 2021 • MPIA, 2020 • ETH Zürich, 2020 • Workshop AO4ASTRO, 2019 • University of Göttingen 2019 • CEA Saclay 2019 • Conference "Combining HRS and HIC for exoplanet characterization", Caltech 2018 • ESO *Thirty Minutes Talk* 2018 • University of Exeter 2017 • Caltech 2017 • Universidad de Valparaiso 2015 • STScI colloquium 2015 • CFHT 2013.

MAJOR COLLABORATIONS AND PROJECTS APOINTMENTS

- 2019 – today Co-I of the SPHERE+ upgrade project
- 2017 – today** **Associate member in the RST/CGI Science Working Group**
- 2017 – today** **PI of the [ERC StG HiRISE](#) project to couple VLT/SPHERE and VLT/CRIRES+. Main**

- international collaborations : University of Göttingen, Durham University, ESO
- 2016 – today Member of the ELT/HARMONI science group
- 2015 Co-instrument scientist of VLT/SPHERE at ESO**
Member of the Instrument Operation Team of VLT/SPHERE
- 2014 – today Co-I of the SHINE survey** performed in SPHERE GTO time (70 people)
Member of the **SHINE leading team** (10 people)
Responsible of the work package dedicated to exoplanet characterization
- 2012 – today Co-instrument scientist of the SPHERE/IRDIS instrument** in SPHERE consortium
Responsible of the validation of the 2 main observing modes (DBI and LSS modes)

SUPERVISION AND TEACHING

Post-docs supervision

- | | | |
|--------------|---------------|--|
| 2021 – today | Jean Costes | Post-doc ERC. HiRISE data analysis and interpretation |
| 2018 – 2021 | Gilles Otten | Post-doc ERC. Development of the SPHERE/CRIRES+ coupling |
| 2015 – 2017 | Roxanne Ligi | Post-doc CNES. Validating Kepler exoplanet candidates with VLT/SPHERE |
| 2014 – 2015 | Graeme Salter | Post-doc ANR. Exploiting VLT/SPHERE commissioning and first-light data |

PhDs supervision

- | | | | |
|-------------|---------------|--------|--|
| 2020 – 2023 | Chen Xie | [50%] | SPHERE archival data analysis for RDI |
| 2019 – 2022 | Mona El Morsy | [100%] | Developing the HiRISE prototype |
| 2018 – 2021 | Mathis Houllé | [100%] | Combining high-contrast and high spectral resolution |
| 2016 – 2019 | A.-L. Cheffot | [30%] | Development of cophasing techniques for the ELT |
| 2012 – 2015 | Alice Zurlo | [30%] | Laboratory and on-sky validation of VLT/SPHERE |

COMMISSION OF TRUST

National and international level

- | | |
|--------------|---|
| Confidential | Expert for the European commission (H2020 programs) |
| Confidential | Expert for the Chilean National fund for scientific & technological developments (CONICYT/FONDECYT) |
| Confidential | Expert for the Natural Sciences and Engineering Research Council of Canada (NSERC) |
| 2020 – 2023 | Member of the CNAP French national committee. Rank B assessor of the committee |
| 2017 – 2018 | Member of the ESO Observing Programme Committee |
| 2015 | ESO SPHERE proposals reviewer and technical feasibility |
| Regular | Member of PhD committees |
| Regular | Referee for astrophysics and optics papers |

Local level

- | | |
|--------------|--|
| 2018 – today | Member of the LAM laboratory council (CL) |
| 2018 – today | Member of the LAM instrumentation steering committee (CPI) |
| 2017 – today | Member of the Aix-Marseille University ERC support committee (CERCle) |
| 2013 – 2014 | Co-representative of the exoplanet group at the LAM scientific council |
| 2012 – 2013 | Organization of the seminars at LAM |
| 2011 – 2012 | Organization of the astrophysics seminars at the University of Exeter |

PUBLICATIONS

- **180+ peer-reviewed publications**, including **13 as first author**
- **54 SPIE publications**, including **11 as first author**
- **6000+ citations**, including 800+ for first-author publications
- **h-index > 40**