

# Chen XIE

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## Research Interests

- Direct imaging of exoplanets and circumstellar disks
- Post-processing methods for high-contrast imaging and spectroscopy data
- Planet-disk interaction
- Using integral-field spectroscopy for the detection and characterization of planets and disks

## Research Position

- **Assistant Research Scientist** Baltimore, MD  
*The Johns Hopkins University* *2023 - present*
- **Graduate Student Researcher** Marseille, France  
*Aix-Marseille Université* *2020 - 2023*

## Education

- **Aix-Marseille Université** Marseille, France  
*PhD in Astronomy* *2020 - 2023*
  - PhD Thesis: Development of advanced post-processing methods for the direct detection of exoplanets with ground-based high-contrast imagers
  - Thesis Advisor: Dr. Arthur Vigan, Dr. Elodie Choquet
- **Leiden University** Leiden, The Netherlands  
*M.Sc. in Astronomy* *2018 - 2020*
  - Major Thesis: VLT/MUSE as a high-contrast imager
  - Thesis Advisors: Prof. Matthew Kenworthy, Dr. Jos de Boer, and Dr. Sebastiaan Haffert
  - Minor Thesis: Radio Observations of Frontier Fields Clusters Abell S1063 and Abell 370: The Discovery of New Radio Halos
  - Thesis Advisor: Prof. Reinout van Weeren
- **Xiamen University** Xiamen, China  
*B.Sc. in Physics* *2012 - 2016*
  - Bachelor Thesis: On the Host Galaxy of GRB 150101B
  - Thesis Advisor: Prof. Taotao Fang

## Internship

- **ASTRON/JIVE Summer Student Programme** Dwingeloo, 2017
  - Built a blind search for diffuse radio emission in galaxy clusters using MSSS data, and doubled the number of clusters with diffuse emission at low frequency ( $<235$  MHz). Ten new candidates of halos and relics were found. The scaling relations were also explored.

## Awards

Poster Prize, Lyot conference . . . . . 2022  
**Oort Scholarship (€22k + tuition waiver)**, Leiden University . . . . . 2018 – 2020  
First Prize of Lin Qiao Prize for Excellent Undergraduate Research Project, Peking University 2016  
First Prize of Guang Qi Scholarships, Shanghai Astronomical Observatory . . . . . 2016  
Aierdan Photoelectric Technology Award, Xiamen University . . . . . 2015  
First Prize of Cai Wenzhong Scholarships, Xiamen University . . . . . 2014

## Mentoring

- **Parcours EuroPhotonics Programe**
  - Developing advanced image-processing techniques to search for exoplanets
  - Sheikh Rahman, Master student, (2021.11-2022.04), Co-supervised with E. Choquet and A. Vigan
  - Youssef Ahmad, Master student, (2022.11-2023.04), Co-supervised with E. Choquet and A. Vigan

## Meetings & Summer schools

ETH Zürich Exoplanets & Habitability Seminar, . . . . . **invited Talk**, Zürich (virtual), 2022  
Debris discs: At Home and Abroad, . . . . . **Talk**, Jena, 2022  
Spirit of Lyot 2022, . . . . . Poster, Leiden, 2022  
European Adaptive Optics Summer School . . . . . UK (virtual), 2021  
Bonn-Dwingeloo Neighbourhood VLBI Meeting . . . . . Bone, 2017  
Peking University Undergraduate Symposium . . . . . **Talk**, Beijing, 2016  
The 19th CAS Guoshoujing Symposium . . . . . **Talk**, Beijing, 2016  
The 10th Jing-Guang-Xia astrophysics Colloquia . . . . . **Talk**, Xiamen, 2016  
SHAO-XMU astrophysics Colloquia . . . . . **Talk**, Xiamen, 2016  
China-New Zealand-South Africa Joint SKA Summer School . . . . . Kunming, 2015  
Shanghai Astronomical Observatory Summer Camp . . . . . Shanghai, 2014

## Skills

**Coding:** Python (advanced), MATLAB (intermediate), C (intermediate), IDL (basic), SQL (basic)  
**Software:** EsoRex, CASA, CIAO, DS9, CIGALE, SPENVIS  
**Engineering:** LabView  
**Language:** Chinese (native), English (fluent)

## Publications

### REFEREED

1st authored:

6. **Dynamical detection of a companion driving a spiral arm in a protoplanetary disk**  
C. Xie, B. Ren, R. Dong, E. Choquet, A. Vigan, +5 coauthors, 2023, *A&A* 675, L1
5. **Reference-star differential imaging on SPHERE/IRDIS**  
C. Xie, E. Choquet, A. Vigan, + 14 coauthors, 2022, *A&A* 666, A32
4. **A MUSE view of the asymmetric jet from HD 163296**  
C. Xie, S. Y. Haffert, J. de Boer, M. A. Kenworthy +4 coauthors, 2021, *A&A* 650, L6
3. **Searching for proto-planets with MUSE**  
C. Xie, S. Y. Haffert, J. de Boer, M. A. Kenworthy +4 coauthors, 2020, *A&A* 644, A149
2. **The discovery of radio halos in the Frontier Fields clusters Abell S1063 and Abell 370**  
C. Xie, R. J. van Weeren, L. Lovisari +13 coauthors, 2020, *A&A* 636, A3
1. **On the Host Galaxy of GRB 150101B and the Associated Active Galactic Nucleus**  
Xie, C., Fang, T., Wang, J., Liu, T., Jiang, X. 2016, *ApJL*, 824, L17

2nd/3rd authored:

3. **A companion in V1247 Ori supported by motion in the pattern of the spiral arm**  
B. Ren, C. Xie, M. Benisty, R. Dong +7 coauthors, 2024, *A&A* 681, L2
2. **The first scattered light images of HD 112810, a faint debris disk in the Sco-Cen association**  
E. C. Matthews, M. Bonnefoy, C. Xie, C. Desgrange +16 coauthors, 2023, *A&A* 679, A58
1. **Keck/OSIRIS Pa $\beta$  High-contrast Imaging and Updated Constraints on PDS 70b**  
Uyama, T., Xie, C., Aoyama, Y. +11 coauthors, 2021 *AJ*, 162, 214

## Successful Telescope Proposals

- **VLTI/GRAVITY: Pinning down the orbit of HD 100453 B**  
PI, 1 hrs 2023
- **VLT/MUSE: Astrochemistry hints at the presence of a young accreting planet**  
d-PI, 3 hrs 2022
- **Subaru: Astrochemistry hints at the presence of a young accreting planet**  
co-I, 0.5 night 2022
- **GMRT: Testing turbulent re-acceleration in Abell S1063**  
PI, 10 hrs 2019
- **VLA: Testing turbulent re-acceleration in Abell S1063**  
PI, 5.6 hrs 2019
- **LOFAR: Observing the previously undetected diffuse radio emission**  
Col-I, 8 hrs 2017
- **CFHT: Studying the origin of X-ray arcs in M51b**  
Col-I, 1 hrs 2016