# Chen XIE

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## Research Interests

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

## 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

National Capital Area Disks Meeting, . . . . . **Talk**, Washington, DC, 2025
Dust Devils workshop, . . . . . **Talk**, Tucson, AZ, 2024
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-/Corresponding-authored:

9. **Water ice in the debris disk around HD 181327**
**C. Xie**, *C. H. Chen, C. M. Lisse, D. C. Hines, +12 coauthors, 2025,* **Nature 641, 608-611**

8. **DESTINYS: Dynamical Evidence of a Spiral-Arm-Driving and Gap-Opening Protoplanet**
**C. Xie**, *C.-Y. Xie, B. B. Ren, M. Benisty, C. Ginski, +6 coauthors, 2024,* **Universe 10, 465**

7. **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**

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:

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

- **JWST (GO 7313): Determining the Origin of the Gas in the 49 Ceti Debris Disk**
**Col-I**, *7.2 hrs* *2025*
- **JWST (GO 6991): Testing planet-disk interaction theory**
**Col-I**, *8.7 hrs* *2025*
- **JWST (GO 6940): Determining the Origin of Water Ice in the $\beta$ Pictoris Disk**
**Col-I**, *13.7 hrs* *2025*
- **VLTI/GRAVITY: Pinning down the orbit of HD 100453 B**
**PI**, *1 hr* *2025*
- **VLT/SPHERE: Locating hidden giant planets**
**Co-I**, *5 hrs* *2025*

- **JWST (GO 5261): Confirming the youngest gap-opening protoplanet**
  **Col-I**, *7.9 hrs* *2024*
- **VLTI/GRAVITY: Pinning down the orbit of HD 100453 B**
  **PI**, *1 hr* *2024*
- **VLTI/GRAVITY: Confirming the youngest gap-opening protoplanet**
  **Co-I**, *3 hrs* *2024*
- **VLT/VISIR: Do exocomets release dust?**
  **Co-I**, *1 hr* *2023*
- **VLT/SPHERE: Locating hidden giant planets: the SAFFRON survey**
  **Co-I**, *54.5 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 hr* *2016*