# Brieuc Collet, PhD candidate

brieuc.collet@lam.fr  brieuc.collet@gmail.com
0000-0003-1314-9632  ADS Page

PhD Candidate specialized in planetary wave-plasma instability using a data analysis approach of in situ radio and electron measurements and analytical modelization

## Employment History

2022 – 2025 **PhD in Astrophysics** Laboratory of Astrophysics of Marseille, Aix-Marseille University (France)
Thesis title: *Understanding the microphysics of Jovian radio auroral emissions with Juno space probe*
Teaching 64h/yr: Physics practical courses and Mathematics tutorials
End of contract October 1st

2022 **Master 2 Internship** Laboratory of Astrophysics of Marseille (France)
Subject: *Understanding the microphysics of Jovian radio auroral emissions with Juno space probe*

2021 **Master 1 Internship** LESIA, Observatory of Paris (France)
Subject: *Characterization of Jovian auroral emissions*

## Education

2021 – 2022 **Master's Degree Plasma Physics, Paris Saclay University**

2019–2020 **Bachelor's Degree of Fundamental Physics, Paris Saclay University**

2019 – 2022 **Magistère of Fundamental Physics, Paris Saclay University**
Supplementary diploma during Master and Bachelor for more class

## Skills

Languages **English & French**: Strong reading, writing and speaking competences ; **Spanish**: Basics

Coding Proficicency in **Python**, Knowledge in **C++** and **IDL**

Astronomy 4 observation nights at Observatory of Haute Provence

## Community Activities

2022–2025 **Member of Laboratory's Sustainable Development group**

**Laboratory's Seminar Organizinng Comitee**

2023–2025 **PhD Representant in Laboratory Council**

**Organizing Comitee in Festival d'Astronomie de Provence**, Local astronomy outreach event

2025 **Local Organizing Comitee** for Planetary, solar and heliospheric Radio Emissions X, Marseille France

## Research Publications

### Journal Articles

1 **B. Collet**, L. Lamy, C. K. Louis, V. Hue, and T. Kim, "In situ analysis of Jupiter's broadband kilometric auroral radio emissions with Juno," Under review, 2025.

2 J. Rabia, V. Hue, C. Louis, N. Andre, Q. Nenon, **B. Collet**, J. Szalay, R. Prange, L. Lamy, P. Zarka, F. Allegrini, R. Ebert, T. Greathouse, B. Bonfond, D. Santos-Costa, R. Giles, J. Kammer, M. Versteeg, G. Gladstone, P. Louarn, *et al.*, "Callisto's auroral footprint revealed by a shift of Jupiter's main aurora," Under review, 2025.

3 **B. Collet**, L. Lamy, C. K. Louis, P. Zarka, R. Prangé, P. Louarn, W. S. Kurth, and F. Allegrini, "A New Type of Jovian Hectometric Radiation Powered by Monoenergetic Electron Beams," *Journal of Geophysical Research: Space Physics*, vol. 129, no. 5, 2024. DOI: 10.1029/2024JA032422.

4 N. Heidari, I. Boisse, N. C. Hara, T. G. Wilson, F. Kiefer, G. Hébrard, F. Philipot, S. Hoyer, K. G. Stassun, G. W. Henry, N. C. Santos, L. Acuña, D. Almasian, L. Arnold, N. Astudillo-Defru, M. Attia, X. Bonfils, F. Bouchy, V. Bourrier, **B. Collet**, *et al.*, "The SOPHIE search for northern extrasolar planets: XIX. A system including a cold sub-Neptune potentially transiting a V = 6.5 star HD 88986," *Astronomy & Astrophysics*, vol. 681, A55, Jan. 2024, ISSN: 1432-0746. DOI: 10.1051/0004-6361/202347897.

5 C. K. Louis, P. Louarn, **B. Collet**, N. Clément, S. Al Saati, J. R. Szalay, V. Hue, L. Lamy, S. Kotsiaros, W. S. Kurth, C. M. Jackman, Y. Wang, M. Blanc, F. Allegrini, J. E. P. Connerney, and D. Gershman, "Source of Radio Emissions Induced by the Galilean Moons Io, Europa and Ganymede: In Situ Measurements by Juno," *Journal of Geophysical Research: Space Physics*, vol. 128, no. 12, e2023JA031985, 2023. DOI: 10.1029/2023JA031985.

6 S. Al Saati, N. Clément, C. Louis, M. Blanc, Y. Wang, N. André, L. Lamy, B. Bonfond, **B. Collet**, F. Allegrini, S. Bolton, G. Clark, J. E. P. Connerney, J.-C. Gérard, G. R. Gladstone, S. Kotsiaros, W. S. Kurth, and B. Mauk, "Magnetosphere-Ionosphere-Thermosphere Coupling Study at Jupiter Based on Juno's First 30 Orbits and Modeling Tools," *Journal of Geophysical Research: Space Physics*, vol. 127, no. 10, e2022JA030586, 2022. DOI: 10.1029/2022JA030586.

### Conference Proceedings

1 **B. Collet**, L. Lamy, C. K. Louis, P. Zarka, P. Prangé, P. Louarn, A. H. Sulaiman, and W. S. K. Kurth, "Characterization of Jovian hectometric sources with Juno: statistical position and generation by shell-type electrons," in *Planetary, Solar and Heliospheric Radio Emissions IX*, C. K. Louis, C. M. Jackman, G. Fischer, A. H. Sulaiman, and P. Zucca, Eds., DIAS and TCD, 2023. DOI: 10.25546/103095.

## Conferences

### Oral Presentations

2022 **Planetary, solar and heliospheric Radio Emissions IX**, Dublin, Ireland

2023 **Chapman on Advances in Understanding Alfvén Waves in the Sun and the Heliosphere**, Berlin, Germany

2024 **French national prospective on Heliophysics (PNST)** , Marseille, France

**Magnetosphere of Outer Planets**, Minneapolis, USA

2025 **EGU General Assembly**, Vienna, Austria *Next April*

**Planetary, solar and heliospheric Radio Emissions X**, Marseille, France *Next June*

### Poster Presentationns

2022 **French national prospective on Heliophysics (PNST)** , Marseille, France
Poster

2024 **Astroradiofr24, French radio frequency astrophysics, towards SKA**, Paris