Etienne Bonnassieux

Date of birth:	19/10/1991	email:	etienne.bonnassieux@uni-wuerzburg.de
Place of Birth:	Noisy-le-Sec	Phone:	+49 17 83 46 40 75

Active international collaborations

Feb 2022 – Present | **DFG Research Unit: "Relativistic Jets in Active Galaxies"**
Specifically working on the project to study "Large-Scale Blazar Jets: Clues on High-Energy Emission from Low-Frequency Radio Observations"..

Oct 2018 – Present | **LOFAR-IT**
Collaboration working to meet the requirements of the Italian LOw Frequency ARray (LOFAR) community. I was the scientific point of contact to elaborate its national computational infrastructure and LOFAR software deployment.

Oct 2017 – Present | **NenuFAR**
French low-ν extension of LOFAR; I head its "Cluster Filaments & Cosmic Magnetism" early key science project ES09. I also participate in the commissioning of the instrument's standalone imaging mode.

Oct 2017 – Present | **LOFAR-VLBI**
Working group tasked with developing the capabilities of the International LOFAR Telescope with Very Long Baseline Interferometry. I bring my expertise in direction-dependent calibration and statistical methods.

Oct 2015 – Present | **LOFAR Surveys KSP**
Working group tasked with creating large-scale surveys of the LOFAR radio sky. LOFAR is the Northern-sky precursor to the Square Kilometer Array, which will be located in the Southern sky: this group therefore aims to ultimately image the entire Northern sky to the instrument's best ability.

Education & Qualifications

Jan 2020 | **Obtained CNU (Conseil National des Universités) Qualification**
Obtained CNU Qualification under Section 34, which makes me eligible to hold lecturer positions in French universities.

2015-2018 | **PhD in Astrophysics** - *Observatoire de Paris & Rhodes University*
Supervisors: Philippe Zarka, Oleg Smirnov, Cyril Tasse
"Statistical Analysis of the Radio-Interferometric Measurement Equation, a derived adaptive weighting scheme, and applications to LOFAR-VLBI observation of the Extended Groth Strip" The adaptive weighting scheme developed as part of this thesis is routinely deployed by the LOFAR Surveys KSP, and has made LOFAR-VLBI achievable in certain cases.
Partnership: LESIA at the Observatoire de Paris (ED127) & RATT-RU, SKA-SA

2013-2015 | **M1 & M2R Astronomie, Astrophysique et Ingénierie Spatiale**
Equivalent to Masters of Science. I graduated in Astronomy & Astrophysics.
Partnership : Observatoire de Paris, PSL, UPMC, Diderot, Orsay, ENS Ulm

2009-2013 | **Bsc (2:2, Hons) in Astrophysics** - *University of Edinburgh*
Bachelors of Science, graduated with Honours.

2008-2009 | **IB Diploma** - *Bahrain School*

Research Positions

Feb 2022 – Present	Post-doctoral Fellowship studying relativistic blazar jets at low frequencies at the Julius-Maximilians-Universität in Würzburg, Germany, under the supervision of Matthias Kadler as part of a joint DFG grant with the University of Hamburg.
Oct 2018 – Feb 2022	Post-doctoral Fellowship studying galactic cluster science at low frequencies at the University of Bologna, Italy, under the supervision of Annalisa Bonafede as part of the DRANOEL ERC grant.

Teaching & Scientific Outreach

Jun 2019	**Lectured at the First Italian LOFAR School** Taught a workshop on using modern direction-dependent calibration & imaging suites DDF and killMS to participants. Helped tutor in the courses of colleagues.
	Tutored in the Paris Observatory DU-LU course
Sep 2017 – Jul 2018	Supervised four students as part of an online course, usually teachers or amateur scientists in the workforce.
Sep 2015 – Jul 2016	Of my six students, four successfully carried on to other programs in the DU; two dropped during the year for personal reasons.
	Lectured for NASSP
Sep 2017	Interferometry course: two 1-hour lectures on visibilities, UV-plane, PSF, and ZVC theorem. Course was aimed at honours astrophysics students at UCT.
Sep 2016	As above, but aimed at masters astrophysics students at UCT: content was at a higher level. This also entailed writing and marking a homework question.
Sep 2017	**Wrote and organised a pyrap tutorial during 3GC4** Wrote an ipython notebook tutorial on pyrap, a python library. Easily converted into scripts, it has been a very popular tutorial with colleagues over the years. It can be found at `https://github.com/ebonnassieux/Scripts/blob/master/PyrapTutorial.ipynb`
Sep 2017	**Editing "Visibility Space" chapter of *Fundamentals of Interferometry*** This is an online coursebook written in multiple ipython notebooks, fruit of years of labour from many contributors. It remains an exceptional educational resource for new scientists, and the one I use as a point of reference for students. I edited Julien Girard's work for clarity in the second year of my PhD, and taught the contents to others during my time in South Africa. Link here: `https://github.com/ratt-ru/fundamentals_of_interferometry`.
	Lectured Physics 101
Jan 2017 – Apr 2017	Introductory undergraduate course in basic mechanics, aimed non-physicist undergraduates. Of 60-odd students, 15 were also in my tutorial group.
	Paris Observatory "Parrainage"
Sep 2016 – Jul 2015	Paris Observatory's outreach program, organised by Alain Doressoundiram. I helped teachers (primary-school, middle-school) organise scientific demonstrations.

Mentoring & Supervision

2021 PRESENT	Supervising a PhD student, Hrishikesh Shetgaonkar, in general interferometry, data reduction, and LOFAR-VLBI methods specifically. This is my first full supervision, including the scientific project in addition to the usual techniques and methods.
202 2021	Co-supervised a PhD student at the University of Bologna, Giada Pignatora, with direction-dependent reduction of LOFAR data. This included teaching basic principles of debugging. We remain in contact, and she is expected to publish at least 1 paper on our work together.
2018 2020	Co-supervised a PhD student at the University of Bologna, Nadia Biava, with reducing data using the LOFAR-Surveys pipeline and with the basics of interferometry, as well as some basics of working on Linux. This involved about an hour of work a week over a period of a few months, as well as 1 paper accepted by Astronomy & Astrophysics.
2018 2020	Co-supervised a PhD student at INAF, Nicola Locatelli, reducing data using the LOFAR-Surveys pipeline and with some basics of interferometry. This involved about an hour of work a week over a period of a few months, and the publication of 1 paper in A&A.
2019	Supervised an MSc student at the University of Bologna, Noemi La Bella,including teaching the basics of working with bash on Linux as well as reducing LOFAR data. This did not result in a publication, though one is in preparation.