

BOURRIER Vincent
Nationality: French
Date of birth: 22 March 1987

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Research and Teaching Fellow at Geneva Observatory

Research interests and skills

Interests: Search for exoplanets. Characterisation of their atmosphere, host star, and orbital architecture
Skills: Specialist of exoplanets close to their star
Observations, data analysis: expert in transit spectroscopy; experienced in velocimetry, photometry
Numerical modeling of exoplanet atmospheres
Languages: French (mother tongue), English (fluent)

Education

09/2014 : PhD in Astrophysics (with honors), Université Pierre et Marie Curie-Paris 6, France
Supervisors : Dr. A. Lecavelier des Etangs & Dr. G. Hébrard
12/2011 : Master in Astrophysics, Space Science & Planetology (ranked 1st)
Université Paul Sabatier, Toulouse, France
11/2011 : Graduate from Supaero, Aerospace and Engineering school (Toulouse, France)

Academic positions

Since 05/19 Research and Teaching Fellow, Université de Genève, Switzerland
Topic : “*Atmospheres and orbital architectures of exoplanets*”
09/14 - 05/19 Postdoctoral researcher, Université de Genève, Switzerland
Topic : “*Observational and modelling studies of exoplanets atmospheres*”
09/11 - 09/14 Doctoral researcher, Institut d’Astrophysique de Paris, France
Topic : “*Characterization of extrasolar planets and their atmospheres*”
03/11 - 06/11 Graduate research assistant, CEA (Astrophysics Division), France
03/10 - 06/10 Graduate research assistant, Laboratoire AstroParticule et Cosmologie, Paris, France
09/09 - 03/10 Graduate research assistant, Open University (M.K., UK) and LMD (Paris, France)

Publications, presentations, awards

- 86 refereed papers : 20 as 1st author (1 in *Nature*), 9 as 2nd author (1 in *Nature*, 1 in *Science*)
- Book chapters on Evaporation (1st author, *Handbook of Exoplanets*) and TRAPPIST-1 atmospheres (*Space Sci. Rev*)
- 23 conference communications (3 invited) and 10 invited seminars
- Young Scientist Prize in Astrophysics, from the International Union of Pure and Applied Physics

Awarded telescope time:

Principal investigator (PI) of 14 programs (pg), co-I of 49 ground-based & 32 space-borne programs

- **HST:** PI of 8 pg with STIS and COS since 2015, representing 82 HST orbits (131 h).
- **HST:** co-I of a Treasury pg (498 orbits), a large pg (108 orbits), 21 small pg (162 orbits). Total 51.2 days
- **CHEOPS (satellite):** Coordinator of a GTO pg and co-I of 2 pg (55 orbits = 92 h)
- **TESS (satellite):** Co-I of a Small Guest Investigator pg
- **GIARPS (TNG, 3.6m, La Palma, Spain):** PI of 3 pg (7 n = 63 h); Co-I of 1 pg (10 h)
- **NARVAL (TBL, 2m, Pic du Midi, France):** PI of 2 pg between 2013 - 2015 (92 h)
- **SOPHIE (OHP, 1.93m, St-Michel, France):** Co-I of the Exoplanet Search programs (2012; ~80 n per semester) and of 10 other pg (42.5 n)
- **SPIRou (CFHT, 3.6m, Hawaii):** Co-I de 6 pg (46.2 h)
- **CARMENES (Calar Alto, 3.5m, Spain):** Co-I of 5 pg (9.5 n = 85.5 h)
- **ESPRESSO (ESO VLT, 8.2m, Paranal, Chile):** PI of 1 pg (2.3 n = 20.3 h); Co-I of 8 pg (20.2 n = 174.6 h)
- **HARPS (ESO 3.6m, La Silla, Chile):** Co-I of 3 pg (50.5 n = 454.5h)
- **HARPS-N (TNG, 3.6m, La Palma, Spain):** Co-I of 10 pg (21.7 n = 195h)

- **PHOENIX** (*Gemini South, 8.1m, La Serena, Chile*): Co-I of 1 pg (6.7h)
- **XMM-Newton** : Co-I of 6 pg
- **NIRSPEC** (*Keck II, 10 m, Mauna Kea, USA*): Co-I of 1 pg (1.5 n)

Teaching experience

- Since 2019** Courses given in the Master in Astrophysics of the Geneva Astronomy Department
- 02/15** Qualified as a lecturer in French Universities (requalified 2019)
- 09/11 - 09/14** Teaching assistant at Université Pierre et Marie Curie-Paris 6, France (64h/yr)
- 09/09 - 06/10** Private english courses to undergraduate students

Supervision of graduate students

- 05/20 - 07/20** Advisor of A. Marret, Master student (1st yr) from Institut d'Optique Graduate School
- 04/19 - 08/19** Advisor of O. Attia, Master student (1st yr) from École polytechnique
- 03/18 - 07/18** Advisor of L. Quilley, Master student (1st yr) from École polytechnique
- Since 09/17** Co-advisor of L. Dos Santos, PhD student from U. Geneva (with Prof. D. Ehrenreich)
- Since 06/17** Co-advisor of J. V. Seidel, PhD student from U. Geneva (with Prof. D. Ehrenreich)
- 05/17 - 07/17** Advisor of A.R. Sax, Bachelor student (3rd yr) from U. Geneva
- 09/16 - 11/18** Mentor of B. Lavie, PhD student from U. Geneva (with Prof. D. Ehrenreich)
- 02/16 - 06/16** Advisor of D. Ringeisen, Master student from EPFL
- 06/15 - 08/15** Co-advisor of L. Akhenak, Master student (1st yr) from U. Paris 7 (with Dr. A. Lecavelier)
- 03/14 - 06/14** Co-advisor of B. Lavie, Master student (2nd yr) from U. Paris 6 (with Dr. A. Lecavelier)
- 03/14 - 06/14** Co-advisor of S. Sulis, Master student (2nd yr) from U. Paris 6 (with Dr. A. Lecavelier)

Commissions of trust

- Reviewer in PhD Defense Committees: E. Rickman (U. Geneva, Switzerland, 2020); B. Lavie (U. Geneva, Switzerland, 2018); L. Pino (U. Padova, Italy, 2018).
- Referee for international peer-review journals (*Nat. Astron., A&A, ApJ, Planet. Space Sci, MNRAS*)
- Referee for *HST* programs and the *NASA* exoplanet programs (*NSPIRES*)

Involvement in instrumentation & research groups

- Active member of the science preparation consortium for the *CHEOPS* ESA mission (characterization of transiting exoplanets on known bright and nearby host stars – launch 2019)
- Collaborator of the *ESPRESSO* Science Team.
- Active member and observer (2/yr) in the science team of the *SOPHIE* spectrograph at OHP (search and characterization of exoplanets using high precision velocimetry) since 2012
- Lead of *MOVES*, international multi-wavelengths program to characterize a hot-Jupiter environment
- Science consortium member for *LUVOIR* (NASA flagship mission project, 2035) UV spectropolarimeter
- Science team member of *ESCAPE* (Extreme-UV Stellar Characterization for Atmospheric Photolysis and Evolution), mission project for NASA *2019 Astrophysics Small Explorer program* (selected in phase A)
- Science team member of *EarthFinder* (high-resolution spectrograph, 280-2500 nm, exoplanet search and characterization), mission concept selected for study by NASA for the *2020 Decadal Survey*
- Member of the *ISSI* (*International Space Science Institute*) study group "(Exo)planetary hydrogen escape"
- Member of the Swiss Society of Astronomy and Astrophysics (SSAA)
- Co-lead of the *Complementary Observations* WG in the *TRAPPIST-1 JWST Community Initiative*

Organisation of scientific meetings & outreach

- 11/19** SOC member of the SEEC symposium *Rocky Exoplanets in the Era of JWST* (NASA GSFC)
- Since 2012** Participation in 32 interviews (radio, TV, newspapers) and press releases
- 09/19** Convener of a 70 people session about atmospheric escape at EPSC-DPS (Geneva)
- 11/18** Presenter at the *Exoplanets* stand for the Geneva Work Fair
- 06/16** LOC chair of the 4th *CHEOPS Science Workshop* (Geneva, Switzerland)
- 09/14-09/16** Co-editor of the *CHEOPS* Science team website and newsletter

- 09/15** Presenter at the *Exoplanètes* exposition in the Geneva Museum
- 12/14** Participation to the Web-documentary *CYBELE* with master students from U. Grenoble
- 10/13** Presenter at French 'Fête de la Science' in Carpentras
- 09/12-09/14** Co-organizer of pre-seminars at Institut d'Astrophysique de Paris