

PhD Position in Exoplanetary Sciences at the University of Geneva, Switzerland

A 4-year PhD position is currently available at the Exoplanet Team of the University of Geneva (Department of Astronomy) starting no later than April 1st 2023. The successful candidate will study planet formation in binary star systems using N-body simulations. She/he will be fully integrated within the Exoplanet Team at the Observatory of Geneva.

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PhD position: Planet formation in binary star systems

Applications are invited for one research assistant position (PhD student) at the University of Geneva (Geneva Observatory) to work under the supervision of Dr. Julia Venturini and Prof. Emeline Bolmont on the modeling of planet formation in binary star systems. The successful applicant is expected to co-develop a numerical code to simulate the accretion and orbital evolution of forming planets in a binary star system. This project aims at investigating how the processes of planet formation, rather well known in the case of single star systems, change due to the presence of a stellar companion. The number of planets detected in binaries and the lack of tools to study these systems makes this question very relevant in the community.

In particular, the student will work on the modelling of planetesimal accretion, which is an important phase in planetary formation, deeply impacted by the presence of the stellar binary companion. The student will be able to use existing codes, such as the Bern Model for population synthesis of exoplanets and investigate the adaptability of the Mercury code and the Posidonius code for the orbital evolution of N-body systems.

Setting: The Geneva Observatory offers one of the most vibrant environments worldwide for exoplanet research. Nearly 60 people contribute to the exoplanet team (www.exoplanets.ch), currently including 10 faculty members, 15 postdoctoral researchers, 17 PhD students, and 22 project staff members. Research topics include exoplanet detection, exoplanet characterization (atmospheres, interiors), planetary system dynamics, and instrumentation. Team members are directly involved into a large number of projects, including photometric instruments (CHEOPS, TESS, PLATO, NGTS), high-resolution spectrographs (HARPS, HARPS-North, NIRPS and ESPRESSO) and direct imaging (SPHERE@VLT). The exoplanet team is also part of PlanetS (www.nccr-planets.ch), a Swiss research network focused on planetary science, which includes ~130 scientists from the Universities of Geneva, Bern, Zurich and ETH Zurich. The successful applicant will be able to take advantage of this unique collaborative framework and also participate in at least one observational run per year.

The University of Geneva is an equal opportunity employer committed to diversity in its workplace, and we specially encourage the application of women.

Start date: no later than April 1st, 2023.

Duration: This is a 4-year position.

Salary: ~48,000 CHF/year gross salary, according to rules of the University and Canton of Geneva. This position is funded by the Swiss National Science Foundation.

Deadline to apply: November 1st, 2022.

Requirements: A MSc degree in astrophysics, planetary sciences or related fields.

Proficiency in Python and Fortran programming, and background on dynamics of planetary systems are considered as a plus. The successful applicant will be immersed in a team work environment, therefore good team playing abilities and focus will be praised soft skills.

The following application materials should be sent as a single pdf file to julia.venturini@unige.ch

- A motivation letter including contact details, information on skills and previous experience, and the names of 2 references/referees (maximum 2 pages).
- A curriculum vitae (maximum 2 pages), including a list of publications (if applicable).
- Academic transcripts of master and bachelor grades.

Two letters of recommendation should be sent directly to Dr. Venturini by the referees themselves, and it is the responsibility of the applicant to ensure that the letters are sent on due date.