

One postdoctoral position in exoplanet science at IA-UNAM in Mexico City

Description

Scope of the position

Applications are invited for one Postdoctoral position at the Instituto de Astronomía at UNAM in Mexico City. The postdoctoral position would provide up to 3 years of support for an individual engaged in postdoctoral research in exoplanet systems after the attainment of the Doctor of Philosophy (Ph.D.) or Doctor of Science (Sc.D.) degree, with the aim to advance our understanding of star and planet formation in the lowest mass regime.

The successful applicant will contribute either toward the theoretical framework on the formation, evolution pathways and habitability of rocky exoplanets orbiting brown dwarfs to understand expected planetary size distributions and their migration processes or toward developing the observational aspects of the exoplanet search around brown dwarfs, including the design of the observing strategy for each target, target spectral type and brightness; but also on the actual scheduling of the observations and corresponding prioritization. The successful applicant will be involved with the science operations and maintenance of the SAINT-EX ground-based observatory (a 1-m, fully robotic telescope located in San Pedro Mártir, Baja California, México). The successful applicant will also have the opportunity to be involved in the SPECULOOS collaboration and pursue their own interests. The successful applicant will develop more awareness of diversity, equity, inclusion and accessibility, and the tools for intrapersonal, interpersonal and systemic work to support organizational change.

A successful postdoctoral researcher will: (1) have an in-depth understanding of planetary systems around ultra-cool stars and brown dwarfs and will be able to create scientifically relevant ideas and projects in the field; (2) author multiple refereed publications per year; (3) have the opportunity to attend international conferences to present their results; (4) work toward their chosen career path, with guidance and mentorship, and (5) will develop intrapersonal and interpersonal skills.

Position details

The position is funded through a Swiss National Science Foundation (SNSF) SPIRIT grant awarded to UNAM and the University of Bern (UniBe) and will support a postdoctoral researcher for up to three years, including these benefits:

- Monthly stipend: \$45,000 MXN*
- Health insurance consideration in stipend
- Access to Mexican observing time at San Pedro Mártir Observatory, Gran Telescopio de Canarias (GTC), Large Millimeter Telescope (LMT), amongst others
- Yearly travel budget for international conferences
- Additional travel budget for collaboration between UNAM and UniBe
- Yearly publication costs and computing resources.
- Yearly UNAM holidays (3 weeks during the summer, 3 weeks during winter and 1 week of spring break), plus Mexican federal holidays.

*Approximate amount as it depends on exchange rate at the time of transfer of the funds from Switzerland to Mexico.

About the Instituto de Astronomía in Mexico City

The successful applicant will join the Instituto de Astronomía at Ciudad Universitaria, in Mexico City. The Instituto de Astronomía is part of the Universidad Nacional Autónoma de México (UNAM), regarded as a top research university in Latin America. The Ciudad Universitaria campus, where the Instituto de Astronomía is located, contains an UNESCO World Heritage site, a natural reserve, several art museums, a science museum, a botanical garden, multiple theaters and concert halls. The Instituto de Astronomía has a 140-year legacy of Astronomy research, which includes managing and developing the Observatorio Astronómico Nacional in San Pedro Mártir in Baja California and Tonantzintla in Puebla. The Instituto de Astronomía in Ciudad Universitaria is composed of ~40 tenure-track astronomy researchers, covering most areas of astronomy. On average every year, there are between 5 to 10 postdocs, about 60 graduate students and 30 undergraduates doing Astronomy research.

Mexico City is a vibrant city, with a population of over 20 million people in the metropolitan area. As one of the largest cities in the world, it has many museums, cultural and sporting activities. Furthermore, there are hiking trails and natural reserve parks around the city within 1 to 2 hour drive from the Ciudad Universitaria campus. The international airport has great connectivity and direct flights to most large cities in the world. The cost of living expenses are affordable.

About the team

The successful postdoctoral researcher will work directly with Prof. Yilen Gómez Maqueo Chew and her group. Prof. Gómez Maqueo Chew has expertise in exoplanet observations, in particular transiting systems, and in the fundamental properties of low-mass stars, via the study of eclipsing binary systems. Furthermore, she is Project Coordinator of the SAINT-EX project, which in collaboration with SPECULOOS, searches for transiting planets orbiting ultra-cool dwarfs. Prof. Gómez Maqueo Chew has strong communication skills and is able to work effectively across time zones.

The successful applicant will work in close collaboration with Prof. Brice-Olivier Demory at the University of Bern, who is Principal Investigator of SAINT-EX, and Prof. Christoph Mordasini, expert in planetary formation, and Prof. Emeline Bolmont, expert in tidal evolution and habitability.

Our team is committed to actively working towards creating a field that allows for every kind of person to create scientific knowledge by promoting an environment in which the contributions of each person are valued.

Key Dates

- Application deadline: **Friday 7 February 2025**

All required materials must be successfully sent via email by this deadline in order for an application to be fully considered for review. Applicants should take the time zone into account if they or their letter writers will be submitting materials from a different time zone. It is strongly recommended that applicants and letter writers submit their materials well in advance of the deadline.

Initial decisions will be made right after the deadline, because the postdoctoral position is available as soon as possible. Applications may be accepted after the deadline until the position is filled. The starting date can be negotiated.

Eligibility

All applicants must:

- Have completed all departmental and institutional requirements for their PhD degree or equivalent, including successful defense of the dissertation in astronomy or astronomy-related field from an institution of higher education by starting date;
- Have been first author of refereed publications in the exoplanet and/or related fields.

Candidates with previous expertise in exoplanet observations, population synthesis modeling and/or ground-based telescope operations are strongly encouraged to apply.

Conditions of the Postdoctoral Position

Those who accept the postdoctoral position must agree to the Code of Ethics of UNAM ([link](#)), and the “Lineamientos para la Igualdad de Género en la UNAM” ([link](#)). In the case of non-Mexican nationals or non-permanent residents of Mexico, the position is conditional to attaining a valid visa. Periodic evaluations of performance will be conducted.

How to Apply

The deadline for application submissions is **Friday 7 February 2025**.

Applications from people with identities that are underrepresented in the field are strongly encouraged to apply.

The application materials should be sent to Dr. Yilen Gómez Maqueo Chew (ygmc@astro.unam.mx) in a single email before the deadline, and should consist of the following:

1. A Curriculum Vitae
2. A research proposal (up to 3 pages)
3. A summary of past achievements (1 page)
4. A full list of publications
5. The names and contact information for 3 references.

Each file should be in PDF format and its filename should contain the applicant's name or last name and an identifier (e.g., LastName_coverletter.pdf or LastName_1.pdf).

Selection Process

Applications will be evaluated by Prof. Gómez Maqueo Chew, Prof. Demory and/or other SAINT-EX team members. They will use all materials included in the application as the basis for determining the extent to which applicants meet the eligibility requirements and selection criteria.

Selection Criteria

The following will be considered in choosing successful applicants:

- Research expertise
- Project compatibility
- If applicable, how experience as a member of an underrepresented group through discrimination, inspiration, resilience, etc. may inform participation in the research group