



## *Postdoctoral Positions in High Energy Theoretical and Observational Astrophysics*

We invite applications for **postdoctoral** positions at the Instituto de Astronomia, Geofísica e Ciências Atmosféricas (IAG), of Universidade de São Paulo (USP), within the High Energy and Plasma Astrophysics group (GAPAE). These positions are part of the FAPESP funded project, "Investigation of High Energy and Plasma Astrophysics Phenomena, Installation of the ASTRI-Mini Array & Construction of the Cherenkov Telescope Array Small Size Telescopes (CTA-SSTs)" ([FAPESP grant 2021/02120-0](#)).

The objective of these positions is to conduct research in high-energy astrophysics phenomena and magnetohydrodynamics (MHD), ranging from stars and compact objects to clusters of galaxies and large scale structures. This involves the application of analytic and numerical techniques using high-performance computing, and also active involvement in the [CTAO](#) and [ASTRI Mini-Array](#) projects.

Special attention will be given to studies on cosmic ray accelerators, cosmic magnetic fields, turbulent environments, compact objects, relativistic jets, accretion flows, galactic outflows, and the development of science programs for the CTA and ASTRI-CTA Mini-Array. Applicants with expertise and experience in any of these fields, as well as familiarity with MHD and PIC codes, are strongly encouraged to apply.

### **Key research topics involve:**

- *Magnetohydrodynamics and High Energy Phenomena around Black Holes and Jets*
- *Cosmic Ray Acceleration, Diffusion and Propagation in Astrophysical Sources & Environments*
- *Star Formation, MHD Turbulence and High Energy Phenomena Interlinks*
- *High Energy and Plasma Phenomena in the Evolution of Galaxies and Large Scale Structures*

[Universidade de São Paulo](#) is ranked as the 85<sup>th</sup> best university globally and is the top-ranked university among Latin American Universities (<https://www5.usp.br/>). The Astronomy Department of IAG-USP stands as a leading institution of excellence in Astronomy, High Energy Astrophysics, and Cosmology in Brazil and Latin America, with a dedicated staff comprising 35 professors, 15 postdocs, over 70 graduate students, and an international visitors program (<http://www.iag.usp.br>). Successful candidates will have access to excellent computing infrastructure within the GAPAE group and IAG-USP.

The FAPESP postdoctoral fellowships have a duration of two years, with the option of renewal for up to four years. These fellowships are exempt from taxes and cover relocation expenses, in addition to providing a research grant for travel, computer equipment, and research-related costs. The monthly stipends amount to 9,047.40 Brazilian Reais.



The FAPESP postdoctoral fellowships have a duration of **two years with possible renewal for up to four years**. These fellowships are tax-free and pay moving costs as well as a research grant for travel, computer equipment and research expenses. The monthly salaries are 9.047,40 Brazilian Reais (<http://www.fapesp.br/en/5427>).

**Applicants' qualifications:**

- PhD in Physics or Astronomy, or related fields.
- Research experience in one or more of the research fields listed above.
- Ability in programming.
- Ability to design and implement original scientific research programs.
- Capacity to develop scientific reports and manuscripts based on original research.
- Capability to deliver professional scientific presentations.
- Ability to work collaboratively in a group environment and with remote collaborators.
- Knowledge of data analysis (statistical concepts and tools).
- Excellent proficiency in English.

Applicants are required to submit a **curriculum vitae, publication list, and a concise statement detailing research accomplishments and interests**. Additionally, **two letters of recommendation** should be arranged to be sent directly via email to:

Elisabete M. de Gouveia Dal Pino

[dalpino@iag.usp.br](mailto:dalpino@iag.usp.br)

**Review of applications will continue until the positions are filled until December 2024.**

**INSPIRE JOB OPORTUNITIES SITE:**

<https://inspirehep.net/jobs/2724845>