

JOB OFFER

SOFTWARE ENGINEER (M/F/X)

Location: [Laboratoire d'Astrophysique de Marseille \(LAM\)](#), Marseille, France

Contract type: 2-year fixed term contract

Start date: January 2025 (flexible)

Position Context

This position is offered in the framework of the **Roman Space Telescope**, NASA's upcoming astrophysics mission, for which the Laboratoire d'Astrophysique de Marseille (LAM) is an international partner. The telescope, currently in the assembly and verification phase at NASA Goddard Space Flight Center, is scheduled for launch in November 2026, with a 5-year science mission. You will work on software tools for the **Coronagraph instrument**, a technology demonstrator designed for **the direct imaging of exoplanets**, a precursor for searching for signs of life on Earth-like planets with the future Habitable Worlds Observatory mission. As part of the science consortium led by NASA's Jet Propulsion Laboratory (JPL), you will work in an international and collaborative environment to develop observation tools and programs. At LAM, you will join the ESCAPE team, funded by the European Union to develop advanced image processing methods that enhance exoplanet detection for these space missions.

Job Description

As a software engineer, your primary mission will be to **develop the software tools** needed to prepare for observations with the Roman telescope's Coronagraph, particularly **the data simulation pipeline**. You will collaborate closely with U.S. scientific teams responsible for this pipeline and tools, as well as with LAM's scientific team, experts in instrumentation and exoplanet observations. You will be part of CeSAM, LAM's department dedicated to scientific computing solutions.

Your main activities will include:

- **Development of the data simulation pipeline:** modeling the astrophysical scene and generating synthetic images in the instrument's output format, in collaboration with the U.S.-based scientists responsible for the simulator.
- **Design and development of observation support tools:** exposure time calculator, observation program planner, and data reduction pipeline.
- **Support for local R&D activities related to Coronagraph observations:** developing and maintaining the local beta-simulator, preparing specific observations, and curating JWST coronagraphic image archives.

Candidate Profile

We are seeking someone with solid experience in software development, motivated by major scientific projects in astronomy, and comfortable with international collaborations. Typical profiles include:

- A computer science graduate (Master's or engineering school), with international experience and a strong interest in astronomy and aerospace.
- A Ph.D. in astronomy with strong software development skills.

Required Skills:

- Master's degree or equivalent in Computer Science/Software Engineering, or Ph.D. in astronomy
- 2-5 years of software development experience
- Proficiency in **Python, Conda, Git**; basic knowledge of UNIX systems and Shell commands
- Good level of English (international experience preferred)
- Analytical skills, autonomy, team collaboration skills
- [Optional] Skills in optics or astronomy

Commitment to Diversity and Inclusion

We value diversity of backgrounds and perspectives, essential for innovation and collective success. We strongly encourage applications from individuals from underrepresented communities, including but not limited to women, people from ethnic minorities, people with disabilities, and any person wishing to bring unique perspectives to our team. We are committed to fostering an inclusive environment where everyone feels valued and supported in their professional development.

Benefits and Work Environment

- Stimulating scientific environment, projects using cutting-edge technologies, innovative R&D. Emphasis on innovation and teamwork.
- Work in collaboration with international partners (NASA, CNES, ESA, JAXA, Max Planck Institute).
- Occasional travel abroad (USA, Europe) to work with partners and participate in international conferences.
- Flexible hours, remote work possible.
- Health insurance, meal vouchers, employee benefits program.
- Salary: between €30,000 and €40,000 gross per year, depending on experience.

How to Apply

Please send your cover letter and CV in PDF format to elodie.choquet@lam.fr.

One letter of recommendation should also be sent to the same address.

Review of Applications: December 13, 2024

Late applications will be accepted until the position is filled.