Control engineer astronomical instrumentation and (space) telescopes
Ref. ATP-2020-95

The Institute of Astronomy at KU Leuven is a young and vibrant research group of some 80 researchers, engineers and administrative staff. The institute is part of the Department of Physics and Astronomy, which conducts fundamental research in various domains in modern physics. It contains several research units comprising activities in physical acoustics and thermal physics, biophysics, nuclear and radiation physics, semiconductor physics, solid state physics, theoretical physics and astronomy. The department belongs to the Science, Engineering and Technology Group, Faculty of Science, and currently counts about 375 staff members.

The Institute of Astronomy is a partner in a wide range of international networks and research projects developing astronomical telescopes and instruments for international observatories and space missions. We are developing CUBESPEC, a CubeSat space telescope for spectroscopy of stars, with the European Space Agency ESA. For the European Extremely Large Telescope (ELT, operational in 2024) we are developing the control system for the mid-infrared instrument METIS. On La Palma (Canary Islands) we operate the small but performant Mercator telescope. We are also developing MARVEL for the La Palma observatory, a new battery of 4 telescopes feeding a high-resolution spectrograph for exoplanet mass and orbit determination. The control of the ground-based instruments and telescopes is primarily based on industrial PLC systems. For CUBESPEC we design custom embedded electronics for the detector read-out, mechanism control and onboard data processing. For these developments we are looking for an engineer with a passion for control technology and astronomy.

More information on the Institute of Astronomy, the ELT-project and the Mercator telescope can be found here:

- fys.kuleuven.be/ster
- www.eso.org/sci/facilities/eelt
- metis.strw.leidenuniv.nl
- www.mercator.iac.es

https://fys.kuleuven.be/ster

Responsibilities

- Design of the control system for the METIS instrument on the European Extremely Large Telescope, mainly based on PLC technology.
- Development, integration and testing of prototypes and production versions of the METIS control system, focusing on software development.
- Preparing of design documentation for project reviews.
- Contributing to the operational maintenance and upgrades of the Mercator telescope in La Palma (remotely from Leuven, sporadic technical missions on-site).
- Development of control electronics for optical and thermal-vac test setups for astronomical instruments and small spacecraft, CubeSat subsystems and CubeSat ground stations.

Profile

- You obtained a relevant degree in e.g. electronics/software engineering, ICT, etc.
- You show a passion for high-tech applications and are willing to continue to study and learn about novel technologies in (industrial) electronics, IT and data communication.
- You show a passion for programming, preferably in Python, C++ or a PLC language, preferably coding software that interacts with real hardware (sensors, actuators, etc.).
- A good command of the English language, able to understand and write technical reports and to orally present your work in an international consortium.
- You are a real team player, able to collaborate with colleagues in Leuven and institutes abroad.
- Regular short missions abroad (Consortium partners in various European countries, La Palma, ESA-ESTEC, …) are not a problem for you.
- Relevant assets: Practical experience with PLCs and TwinCAT; Practical experience with FPGAs, digital electronics design and the manufacturing specifications of PCBs, including the proper software tools; A basic knowledge of Linux; Interest and some knowledge about space, astronomy and astronomical observations.

Offer

We initially offer a fulltime contract for 1 year, with the possibility that the contract can be extended to an indefinite period of time. This function will be renumerated in the KULeuven salary scale 7, 8 or exceptional scale 9, depending on your relevant experience and competences.

You are offered the opportunity to work in a multi-disciplinary and international team in a vibrant research environment. You are offered the possibility to continue to learn and deploy your own initiatives.

Interested?

For more information please contact Mr. Timo Lamparter, tel.: +32 16 19 40 71.

Contact for specific questions on the contents of the job:
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You can apply for this job no later than March 30, 2020 via the online application tool:
http://www.kuleuven.be/applytingforjobs/light/55570105

KU Leuven seeks to foster an environment where all talents can flourish, regardless of gender, age, cultural background, nationality or impairments. If you have any questions relating to accessibility or support, please contact us at diversiteit.HR@kuleuven.be.