Job advertisement for
Project Engineer-I (Inida-TMT Telescope Control System Software)

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) is an autonomous institution set up by the University Grants Commission (UGC) of India to promote the nucleation and growth of active groups in astronomy and astrophysics at Indian universities. IUCAA aims to be a centre of excellence within the university sector for teaching, research and development in astronomy and astrophysics.

IUCAA's activities fall under two broad programmes: core academic programmes and visitor academic programmes. Core academic programmes include basic research, the PhD programme, advanced research workshops and schools, the giant metre-wave radio telescope and guest observer programmes. Visitor academic programmes include the visitor and associates programme, refresher courses for teachers and helping the nucleation and growth of astronomy and astrophysics at Indian universities.

India has joined the Thirty Meter Telescope (TMT) project, the next generation astronomical observatory that will be located on Mauna Kea, Hawaii. India's participation in the TMT Project, led by the Indian Institute of Astrophysics (IIAP, Bengaluru, Inter University Centre for Astronomy and Astrophysics (IUCAA), Pune and Aryabhatta Research Institute for Observational Sciences (ARIES), Nainital is coordinated by the India TMT Coordination Centre (ITCC) hosted at IIA, Bengaluru. The TMT project is an international partnership between California Institute of Technology (CalTech), Universities of California, Canada, Japan, China and India. More details about the project may be obtained from http://tmt.iiap.res.in The Thirty Meter Telescope (TMT; https://www.tmt.org/) will be the world's most advanced ground-based observatory that will operate in optical and mid-infrared wavelengths. It will be equipped with the latest innovations in precision control, phased array of mirror segments and laser guide star assisted adaptive optics system, which will help correct for image blur caused by the atmosphere of the Earth, helping it to reach the potential of such a large mirror.

About 70% of India's contribution to the construction of TMT will be in-kind. India's work share consists of both hardware and software. In software, India-TMT is responsible for delivering the Observatory Software (OSW) and Telescope Control System (TCS).

TCS is responsible for the coordination and control of various subsystems that make up the Telescope Controls (https://www.tmt.org/page/controls).India-TMT is responsible for taking TCS through the project phases i.e. (1) the Preliminary design phase, (2) the Final design phase, (3) the Code and Test phase, (4) the Integration and Test phase and, finally, (5) the Assembly, Integration and Verification at the telescope site. The TCS is currently undergoing the Preliminary Design phase, which started in July 2017 and is scheduled to finish in September 2019. The telescope is expected to be ready for science in 2029-30.

Online applications are invited from dynamic and highly motivated individuals for the India-TMT Telescope Control System Software Project Engineer-I to work at IUCAA.

Name of the position: Project Engineer-I (TMT Telescope Control System Software)
Remuneration: Rs. 65,000/- per month and other benefits like medical cover (higher salaries will be considered for candidates with progressively more experience and qualifications)
Age Limit: 45 years

The position will be based at IUCAA, Pune but may require frequent visits to vendor locations in India, or TMT partner countries and the telescope site.

Important dates
a. Opening date for on-line application: June 17, 2019
b. Closing date for on-line application: July 04, 2019

Job Description
This position is responsible for providing local supervision of the design and development of TMT telescope control software being carried out by a vendor in India. This entails occasional prototyping, providing design advises in conjunction with the TMT Project Office, reviewing work products and eventually supporting commissioning and maintaining the TCS. The candidate is expected to have a working knowledge of control theory and proven experience in developing and integrating distributed real time control software solutions for engineering or scientific applications with involvement in all aspects of the software life cycle from specification through deployment. A working knowledge of adaptive optics systems is highly desirable.

The ideal candidate should be a motivated, self-starter who can collaborate effectively across disciplines. Incumbent is expected to have a sound knowledge of modern software engineering practices.

Duties and Responsibilities
• Specify, design, implement, test and integrate software and upgrades for the telescope control system.
• Extract software requirements from high-level functional and performance requirements.
• Participate in acceptance of deliverables and hand-over activities with TMT partners for new capabilities.
• Participate in software systems enhancement, maintenance, troubleshooting, and operational support.
• Prepare and deliver technical presentations at team meetings, reviews and conferences.

Minimum Qualifications, Knowledge, Skills and Abilities
- B.E./B.Tech. degree or equivalent in Computer Science or a related field
- 3 or more years of experience in developing large and complex distributed systems
- Good knowledge of C/C++ and JVM programming languages
- Strong knowledge of Linux as a development platform
- Involvement in all aspects of the software life cycle from specification through deployment
- Excellent communication and reporting skills

Preferred Qualifications and Abilities
- Advanced degree in computer science or mathematics
- Working experience in physics, mathematics or controls
- Working knowledge of Telescope, Adaptive Optics and Observatory software
- Knowledge of git revision control system and workflows
- Experience in creating design documents and reports, and oral presentations
- Experience in developing code used for observing tools, data tools, and/or general software development, preferably in an astronomical facility or research institution
- Experience in working with multi-disciplinary teams