



W. M. KECK OBSERVATORY

SOFTWARE ENGINEER

This position requires you to submit your [resume on-line](#) with your cover letter that states why you are uniquely qualified for the position.

Additional information about WMKO and this position may be found on our website at www.keckobservatory.org
EEO/M/F/D/V

POSITION DESCRIPTION

POSITION TITLE:	Software Engineer	DEPARTMENT:	Software
INCUMBENT:		FLSA STATUS:	Exempt
REPORTS TO:	Senior Software Engineer	MEMBER:	
SUPERVISES:	N/A		

SUMMARY:

This position is responsible for a variety of duties related to developing, deploying and optimizing software for control solutions used at the observatory and integration of partner developed science instruments.

The candidate is expected to have a minimum of 5 years' proven experience developing and integrating distributed control software solutions for engineering or scientific applications with involvement in all aspects of the software life cycle from specification through deployment.

The candidate is expected to have sound knowledge of modern software engineering practices. Practical experience in the following is required: strong C/C++ with significant O-O design and development; UNIX platform development environment using the gnu tool chain under Linux or Solaris; working with communication middleware such as RPC, RMI, ICE or messaging systems; working with real-time OS like VxWorks or RT Linux; User Interface development with Tcl/Tk, Java, Qt, Python or other toolkits.

The ideal candidate should be a motivated, self-starter who can collaborate effectively across disciplines in a fast paced environment and will have experience working with EPICS at an astronomical observatory or high energy physics experiment facility. Experience with driver development and motion control is highly desirable.

ESSENTIAL FUNCTIONS:

1. Specify, design, code, integrate, and test control software to implement new observatory control systems and to improve and optimize existing deployments.
2. Provide technical support during and post commissioning.
3. Provide software documentation and assist in developing end-user documentation for operations handover to assure updated and accurate reference documentation is available when needed.
4. Respond to questions and perform troubleshooting to provide end-user support for observatory software, at times out of regular hours.
5. Ensure the quality and reliability of the software base through the application of standardized change control, build, and release strategies.
6. Provide highly effective collaboration across disciplines. This includes working with software, electronic, and opto-mechanical engineers as well as scientists at the observatory and external collaborators at other institutions. Collaborative assignments include engagement on systems engineering tasks and active participation on integration testing of subsystems in the laboratory and on the telescope.

7. Work effectively with coworkers and others by sharing ideas in a constructive, positive manner; listening to and objectively considering ideas and suggestions from others; keeping commitments; keeping others informed of work progress and issues; addressing problems and issues constructively to find mutually acceptable and practical solutions; and respecting the diversity of the WMKO workforce in actions, words, and deeds.
8. Maintain commitment to a high standard of safety, comply with all safety laws and WMKO safety policies/rules, and report actual and potential safety violations to appropriate supervisory or management personnel to further WMKO's core value of safety.

OTHER DUTIES:

1. Perform other duties consistent with the scope of the position, as specified by the Software Engineering Manager.

Minimum Qualifications:

Education and Experience

1. Five years' experience in development and maintenance of distributed control systems for engineering or scientific applications.
2. Bachelor of Science or equivalent in Computer Science, Electrical Engineering, Physics, Mathematics or other relevant engineering or science field.
3. Hands-on experience with real-time operating systems.
4. Experience implementing complex automation controls (such as device control, motion control and sequence control) in a scientific or industrial setting.

Skills

1. Broad knowledge of modern software engineering practices.
2. Competency in Unix, C, and at least one of the following domain specific languages: MatLab, IDL, LabVIEW, Function Block
3. Strong competency using O-O paradigm and design patterns in delivering software based solutions in Java or C++
4. Practical experience of change control, build and release management processes
5. Has a sound working knowledge of software concepts such as process and task management, multi-threading, and inter process communications, network programming in distributed control environments.
6. User Interface development with Tcl/Tk, Java, Qt, Python or other toolkits
7. Applied mathematical and statistical skills
8. Excellent written and oral communication skills.
9. Ability to work independently and as a member of a team.
10. Demonstrated ability to work collaboratively across disciplines
11. Problem solving—the individual identifies and resolves problems in a timely manner and gathers and analyzes information skillfully.
12. Interpersonal Skills—the individual maintains confidentiality, remains open to others' ideas and exhibits willingness to try new things.
13. Oral communication—the individual speaks clearly and persuasively in positive or negative situations, demonstrates group presentation skills and conducts meetings.
14. Written Communication—the individual edits work for accuracy and correctness, presents technical data effectively and is able to read and interpret written information.
15. Planning/organizing—the individual prioritizes and plans work activities, uses time efficiently and develops realistic action plans.
16. Quality control—the individual demonstrates accuracy and thoroughness and monitors own work to ensure quality.
17. Adaptability—the individual adapts to changes in the work environment, manages competing demands and is able to deal with frequent change, delays or unexpected events.
18. Dependability—the individual is consistently at work and on time, follows instructions, responds to management direction and solicits feedback to improve performance.
19. Safety and security—the individual actively promotes and personally observes safety and security procedures, and uses equipment and materials properly.

Other Requirements

1. Willingness to commit to WMKO core and cultural values. Core Values: Safety, Integrity, Respect, Discovery and Service. Cultural Values: Education,/Learning, Communication, Teamwork, Rewarding Work

- Environment, Excellence and Community Involvement.
 - 2. Willingness to stay current with changing technology.
 - 3. Willingness and ability to work some nights and weekends.
 - 4. Valid driver's license.
- Desirable Qualifications:**
- 1. Experience programming in distributed control frameworks such as EPICS.
 - 2. Experience in adaptive optics systems
 - 3. Experience with camera interfaces and image analysis software
 - 4. Experience programming motion controllers such as PMAC or Galil
 - 5. Experience at an astronomical observatory or high energy physics experiment facility
 - 6. Advanced degree in a relevant technical field.
 - 7. Demonstrated ability to provide leadership across technical disciplines, to energize and persuade others and strive for excellence.

PAY AND BENEFITS:

WMKO offers a competitive salary and benefits package commensurate with qualifications and experience.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions. While performing the duties of this job, the employee is regularly required to sit, work at a computer terminal for extended periods of time. The employee frequently is required to use hands, hands to finger, handle, or feel objects, tools or controls and talk or hear. The employee is occasionally required to stand; walk; reach with hands and arms; and stoop, kneel, crouch or crawl. Specific vision abilities required by this job include close vision, depth perception and the ability to adjust focus. Works occasionally at the Observatory (14,000 feet elevations), often in cold conditions.

SPECIAL REQUIREMENTS:

Employment is contingent upon successfully passing an employee reference check, criminal background check and a five year motor vehicle history check. This is an exempt position under FLSA regulations.

AT WILL EMPLOYMENT:

I understand that if employed, I am employed AT WILL and that no contract between myself and this employer is created by my completion of this application, my receiving employment, my continued employment or my receiving benefit of employment of any type. No promises of any form or nature have been made to me, no guarantee of any length of employment is or shall be binding on this Employer, unless in writing. I reserve the right to terminate my employment at any time and the Employer has the same right at any time.

I agree to physical or other testing when such testing is reasonably necessary in determining job related abilities or reasonable expectation of successfully performing the job to the Employer's standards.

This job description does not constitute an employment agreement between the Employer and employee, and is subject to change as the needs of the Employer and requirements of the job change.

The statements contained herein reflect general details as necessary to describe the principal functions of this job, the level of knowledge and skill typically required, and the scope of responsibility but should not be considered an all inclusive listing of work requirements. Individuals may perform other duties as assigned, including work in other functions or areas to cover absences or relief, to equalize peak work periods, or to otherwise balance the work load.

Incumbent _____ Date _____ Supervisor _____ Date _____