



W. M. KECK OBSERVATORY
On the summit of Mauna Kea, Island of Hawai'i

ADAPTIVE OPTICS (AO) SCIENTIST

The W. M. Keck Observatory operates the world's two largest optical/infrared telescopes located on the summit of Mauna Kea on the Big Island of Hawaii. Both telescopes are equipped with AO systems which are routinely used in both Natural and Laser Guide Star (LGS) AO modes. These systems have been extremely productive scientifically and new, even more capable, systems are currently in design and development.

The successful candidate will be involved in the design and implementation of the new LGS AO systems and optimization of the existing systems. In particular, the candidate will be a main contributor in the integration, commissioning and science verification of the Keck I LGS AO system and the development of the future Next Generation Adaptive Optics (NGAO) system currently in the early design phase. This position may include time for personal research. Ideal candidate should be a motivated, self-starter who can work independently to meet time sensitive deadlines within a fast-paced environment independently and as part of a multidisciplinary team.

The requirements for this position include: a PhD level degree in the physical sciences or engineering or equivalent. Prior AO system development, astronomical instrumentation and/or astronomical observatory experience is highly desirable.

The following skills are required: The successful applicant should be highly competent in using high-level programming languages, such as IDL (interactive Data Language), in the development of systems control software and for data analysis.

This is a regular position with a competitive, comprehensive benefits package including relocation assistance and private school (K-12) tuition support for dependent children. Salary is dependent upon qualifications and experience. The position is opened until filled. Employment is conditional on successful completion of drug tests. Mail or fax resumes, references, and salary history to: AO Scientist, WMKO, 65-1120 Mamalahoa Highway, Kamuela, HI 96743; Fax (808) 881-3696 or employment@keck.hawaii.edu. Additional information about WMKO and this position may be found on our web site at www.keckobservatory.org. EEO/M/F/D/V

POSITION DESCRIPTION

POSITION TITLE:	Adaptive Optics Scientist	DEPARTMENT:	Optics/Adaptive Optics
INCUMBENT:	Vacant	FLSA STATUS:	Exempt
REPORTS TO:	Optical Systems Manager	MEMBER:	
SUPERVISES:	N/A		

SUMMARY:

Under the general supervision of the Optical Systems Manager, this position designs, develops, commissions and optimizes adaptive optics systems for the W. M. Keck Observatory (WMKO). Ideal candidate must be a motivated, self-starter who can manage multiple tasks and priorities within a fast paced environment.

ESSENTIAL FUNCTIONS:

1. Play a lead role in the design, development, commissioning and optimization of the next generation AO system.
2. Play a lead role in the commissioning and optimization of the Keck I LGS AO system.

3. Participate in AO facility improvements, optimization and characterization.
4. Support the development of the AO team and AO expertise at the Observatory.
5. Conduct research in adaptive optics and stimulate research at WMKO to further WMKO's core value of discovery.
6. 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.
7. 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.

Minimum Qualifications:

Education and Experience

1. Ph.D. level degree engineering, optics, astronomy or physics, or equivalent experience.
2. Two years' of relevant adaptive optics systems experience, including modeling, characterization and optimization experience.

Skills

1. Excellent written and oral English communication skills.
2. Ability to work independently and as part of a team.
3. Ability to evaluate information and exercise good judgment in making decisions.
4. Substantial computer literacy.
5. Strong sense of team spirit.
6. Problem solving—the individual identifies and resolves problems in a timely manner and gathers and analyzes information skillfully.
7. Interpersonal Skills—the individual maintains confidentiality, remains open to others' ideas and exhibits willingness to try new things.
8. Oral communication—the individual speaks clearly and persuasively in positive or negative situations, demonstrates group presentation skills and conducts meetings.
9. Written Communication—the individual edits work for spelling and grammar, presents numerical data effectively and is able to read and interpret written information.
10. Planning/organizing—the individual prioritizes and plans work activities, uses time efficiently and develops realistic action plans.
11. Quality control—the individual demonstrates accuracy and thoroughness and monitors own work to ensure quality.
12. 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.
13. Dependability—the individual is consistently at work and on time, follows instructions, responds to management direction and solicits feedback to improve performance.
14. 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
2. Ability and willingness to work a varying schedule including nights and weekends.
3. Ability to obtain a valid driver's license.
4. Successful completion of high altitude physical.
5. Ability to work effectively at 14,000 feet.

Desirable Qualifications:

1. Five years of work experience in the field of adaptive optics.

2. Expertise in systems control software and optimization.
3. Expertise in data analysis and in the use of high-level computer programming languages such as IDL.
4. Expertise in astronomy, optics, software, electronics and mechanical engineering.
5. Previous Observatory and/or astronomy experience.
6. Proven track record in developing facility-class systems.
7. Excellent publication record.

Incumbent

Date

Supervisor

Date