Present day astronomers seek to understand the creation and movement of our universe. Comets, planets and stars, as well as collections of stars such as globular clusters (up to 1 million stars) and galaxies (up to 100 million stars) are studied. Astronomy is also concerned with how and when the universe began and what will happen to it in the future. The training astronomers receive is in high demand in other fields because astronomers learn to be problem solvers and pick up lots of math and computer skills.

Although Hawaiians made detailed observations of the Earth’s sky including celestial bodies, this knowledge was used for purposes different than those of modern day astronomers. Their observations were so detailed that transcribers of the language did not know the English equivalent to many of their names. Today, many stars and constellations have been given new names as we rediscover the knowledge that was once privileged to those great voyagers.
IT Specialist

Individuals in this position may perform a variety of computer-related duties as a data specialist, in support of astrophysical research in the area of user support. At this level, the incumbent is in a developmental trainee level where the employee receives on-the-job-training and developmental experience. Activities such as specifying, testing, writing, modifying, debugging, and/or documenting software, user support, proposal planning, and data analysis: running software and analyzing data output; developing and maintaining materials or pages for web sites; providing support to users via personal interaction and email; and assisting in the running of meetings and workshops.

Education

Bachelors Degree with a minimum of one year specialized experience gained through work as a computer assistant, programmer, research assistant or a graduate degree.

Skills & Experience

Strong ability to communicate effectively and to work both independently and as an integral member of a diverse team of scientists, engineers and technical staff.

Projects in Hawaii

- Telescope support at headquarters or directly through the instrument
- Debugging, documenting and writing software
- Support for users

Employers

**Government:** Maui Space Surveillance System, UH, Air Force, Universities
**Private:** Smithsonian Astrophysical Observatory, Keck Telescopes, MOSAIC, Pacific Disaster Center, Oceanit, Hoku Scientific

Yearly Salary

$43,801 to $67,125

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Kilo Hōkū – Astronomy

Radio Astronomer

The selectee will conduct astronomical research by identifying, defining and selecting specific areas of interest and determining the most fruitful path for investigations. Basic observations are conducted through atmospheric windows and need to be able to adjust receivers to include a high frequency range. Lead the development of the array bandwidth for all receivers.

Education

PhD in an advanced field of physics or astronomy.

Skills & Experience

Strong understanding of interferometers with "hands on" experience. This experience may have been gained through at least two year's postdoctoral research; demonstrated experience in using modern computer techniques for the acquisition, analysis and interpretation of radio-astronomical imaging observations; the ability to communicate effectively and to work both independently and as an integral member of a diverse team of scientists, engineers and technical staff; and experience with and skill in presenting scientific results to scientific meetings and seminars and in the preparation of scientific papers for publication.

Yearly Salary

$57,709.00 to $75,025.00

Projects in Hawaii

- Submillimeter Array on Mauna Kea
- Visualizing new areas within the solar system
- Mapping the presence of celestial bodies

Employers

Government: Maui Space Surveillance System, UH, Air Force, Universities
Private: Smithsonian Astrophysical Observatory, Keck Telescopes, MOSAIC, Pacific Disaster Center, Oceanit

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Kilo Hōkū – Astronomy

High School Physics Teacher

Instruct College Prep and regular Physics courses. Willingness to obtain a graduate degree if not already attained. Must attend department and faculty meetings and serve as a moderator for after-school clubs (usually once per week). Willingness to serve on a faculty committee and as a class advisor preferred.

Education

Bachelors Degree is Science or Education with a strong emphasis on physics & math.

Skills and Experience

Prior teaching experience preferred and a love for teaching. A teaching certificate and teaching experience or a certificate/degree and experience in a specialty area are preferred qualifications.

Yearly Salary

$36,709.00 to $45,025.00

Projects in Hawaii

- College Prep Courses
- Conceptual Physics
- Introductory Physics
- Writing curriculum

Employers

Government: Hawaii Department of Education, University of Hawaii Lab Schools and College of Ed. Charter Schools
Private: Catholic and other Private Schools including Damien Memorial, Kamehameha Schools, Punahou, St Lois, Hawaii Preparatory Academy

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Space Camp Instructor

Specializes in astronomy and the hands-on exploratory activities to help convey scientific concepts. Requires a passion for learning and working with children. Must be a positive, energetic, and organized team member eager to learn new content. Bring science to life through hands-on, experiential classes and activities.

Education

Bachelors degree, preferably in the sciences.

Skills & Experience

Previous teaching experience is a plus. First Aid and CPR Certification required and lifeguard certification is helpful.

Yearly Salary

Hourly and Stipend based ~ $12/hour

Projects in Hawaii

- Working with science discovery areas
- Summer and Break camps
- School groups and special interest programs

Employers

Government: University of Hawaii - College of Education or Institute for Astronomy, NASA
Private: Outreach Centers of the various telescopes, MOSAIC
Non-Profit: Hawaii Astronomical Society, FutureFlight, Apollo Society
Kilo Hōkū – Astronomy

University Lecturer

Teach assigned courses in the discipline; maintain minimum of one office hour per week for each course taught; prepare course syllabus and reports related to teaching and student progress; work under supervision of division chairperson in integrating teaching efforts with other instructors in the discipline area. Duties and responsibilities may include work with multi-media presentation, distance education instruction, and teaching at off-campus sites.

Education

Master’s degree in relevant discipline. Demonstrated teaching effectiveness.

Skills & Education

College teaching experience preferred. Ability to create course syllabus and curriculum.

Yearly Salary

Based on credit hours
Minimum $1215/credit

Projects in Hawaii

- Working with science discovery areas
- Summer and Break camps
- School groups and special interest programs

Employers

Government: University of Hawaii and Hawaii Community Colleges
Private: Hawaii Pacific University, Chaminade, Brigham Young University
Kilo Hōkū – Astronomy

Astronaut Candidate

Astronauts are involved in all aspects of assembly and on-orbit operations of the International Space Station. This includes extravehicular activities (EVA), robotics operations using the remote manipulator system, experiment operations, and onboard maintenance tasks. Astronauts are required to have a detailed knowledge of the ISS systems, as well as detailed knowledge of the operational characteristics, mission requirements and objectives, and supporting systems and equipment for each experiment on their assigned missions.

Education

Bachelor’s degree from an accredited institution in engineering, biological science, physical science, or mathematics.

Skills & Experience

Degree must be followed by at least 3 years of related, progressively responsible, professional experience. Ability to pass the NASA long-duration space flight physical.

Yearly Salary

$59,493.00 - $130,257.00

Projects in Hawaii

• very little
• lots of outreach potential
• Live on the continent and commute to Hawaii

Employers

Government: National Aeronautics and Space Administration, European Astronaut Center
Private: Aeronautic engineer companies

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Kilo Hōkū – Astronomy

Astronomer

Observational astronomers spend between 10 and 30 nights per year working at an observatory or getting observations from spacecraft, and the rest of their time analyzing the data they've collected. Others, such as theoretical astrophysicists, may not even work with observing equipment but conduct a great deal of their astronomy research using supercomputers. Much of the astronomer's work day consists of analyzing data, interpreting observations, or planning observational programs.

Education

Ph.D. degree in Physics, Astronomy, Astrophysics or related discipline.

Skills & Experience

Well-versed in instrumentation, remote sensing, spectral observations, and computer applications to unusual problems.

Yearly Salary

$80,000-100,000.00

Projects in Hawaii

• Individual Research
• History of the Universe
• Searching for new planets and solar systems
• Understanding physical phenomena

Employers

Government: University of Hawaii or other University and Research Programs based in Hawaii, National Observatories
Private: Hawaii Pacific University, Praesepe Scientific Data Analysis SL, SAIC

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Kilo Hōkū – Astronomy

Laser Spotter

Perform as an aircraft spotter during laser propagation to assure proper sighting and recording of airplane activity according to prescribed guidelines. 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.

Education

None required

Skills & Experience

Ability to lift 50 pounds; Ability and willingness to work a varying schedule including nights and weekends; Successful completion of high altitude physical.

Yearly Salary

Hourly, On-call Status
$10-15.00/hr

Projects in Hawaii

• Support Observatory operations
• Assist military and research personnel
• Notify staff of airline presence

Employers

Government: University of Hawaii or other University and Research Programs based in Hawaii, National Observatories
Private: Hawaii Pacific University, Praesepe Scientific Data Analysis SL, SAIC

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future
Materials Scientist

Materials scientists attempt to learn about the composition of natural and synthetic materials in order to enhance them or develop new ones. These materials, such as metals or plastic, can be found in everyday items or in large structures. Research and study the structures and chemical properties of various natural and manmade materials, including metals, alloys, rubber, ceramics, semiconductors, polymers, and glass. Determine ways to strengthen or combine materials or develop new materials with new or specific properties for use in a variety of products and applications. Include glass scientists, ceramic scientists, metallurgical scientists, and polymer scientists.

Education

BS in Engineering, Chemistry, Physics or related science. PhD a plus.

Skills & Experience

Attention to detail extremely important and the ability to follow and create specific instructions in the creation and processing of materials.

Yearly Salary

$73,210 - $160,000

Projects in Hawaii

• Support research at local universities
• Assist military and research personnel
• Solar and alternative energy technologies

Employers

Government: University of Hawaii or other University and Research Programs based in Hawaii, National Observatories
Private: Hawaii Pacific University, Praesepe Scientific Data Analysis SL, SAIC, Hoku Scientific
Kilo Hōkū – Astronomy

Computer Systems Analyst

Provide staff and users with assistance solving computer related problems, such as malfunctions and program problems. Test, maintain, and monitor computer programs and systems, including coordinating the installation of computer programs and systems. Use object-oriented programming languages, as well as client and server applications development processes and multimedia and Internet technology. Confer with clients regarding the nature of the information processing or computation needs a computer program is to address. Coordinate and link the computer systems within an organization to increase compatibility and so information can be shared. Determine computer software or hardware needed to set up or alter system.

Education

BS in Computer science, engineering or related science.

Skills & Experience

Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming. Understanding the implications of new information for both current and future problem-solving and decision-making.

Projects in Hawaii

- Support research at local universities
- Assist military and research personnel
- Solar and alternative energy technologies

Employers

Government: All Federal and State departments, UH and other research departments
Private: Alakai Consulting & Eng., SDC Hawaii, HiBeam, Hoku Scientific, Trex Enterprises, Kamehameha Schools

Yearly Salary

$63,600 starting
Kilo Hōkū – Astronomy

Software Engineer

Plays a leadership role in the analysis of requirements, design, and programming of our software solutions. Applies and upholds industry standard methodologies of systems design and architecture. Works effectively within a team and provides technical leadership and mentorship to other software applications engineers. Performs analysis and identifies solutions to complex technical problems.

Education

BS degree in computer science, engineering, or related field

Skills & Experience

3+ years experience in developing software engineering solutions, in all phases of the software development lifecycle: analysis, design, implementation and maintenance. Proficiency in at least one of the following programming languages: Java, C#, C++. Experience with networking technologies (Ethernet, IP v4/v6, TCP/IP, QoS, Routing) preferred. Team player with good interpersonal/communication skills. Must be able to attain security clearance.

Yearly Salary

$68,764 +

Projects in Hawaii

• Support research at local universities
• Assist military and research personnel
• Solar and alternative energy technologies

Employers

Government: University of Hawaii or other University and Research Programs based in Hawaii, National Observatories
Private: Hawaii Pacific University, Referentia Systems Inc., SAIC, Hoku Scientific, Navatech, Novasol

Ka ‘Aha ~ a symbol for Sustainability in Hawai‘i ~ Past, Present & Future