

Testimony for OHA: Modern History of Astronomy in Hawai'i

The Polynesian Voyagers were some of the best astronomers of their time and brought the Hawaiian ancestors to these islands, using the best technology available at their time. Modern astronomy in Hawai'i begins with King David Kalākaua, who invited an expedition of British astronomers to Hawai'i in 1874 to observe the transit of Venus. This was one of the most important measurements at that time, basically establishing the size of our solar system, and therefore the universe: *"It will afford me unfeigned satisfaction if my kingdom can add its quota toward the successful accomplishment of the most important astronomical observation of the present century and assist, however humbly, the enlightened nations of the earth in these costly enterprises..."* King Kalākaua, September 1874. A few years later, in a letter to Captain R. S. Floyd in 1880, King Kalākaua had expressed a desire to see an observatory established in Hawai'i. A telescope was purchased for Punahou School in 1884. The first scientific astronomical and geophysical studies on the summit of Maunakea were during the Hawaiian monarchy in 1892 as part of an extensive survey of the island of Hawai'i.

After the second devastating tsunami of 1960, the use of Maunakea for astronomy had been championed, mainly for economic reasons, by the Hilo Chamber of Commerce Executive Mitsuo Akiyama with the help of the later director of the Mauna Loa Observatory, Howard Ellis. They invited Dr. Gerard Kuiper of the Lunar and Planetary Science Laboratory at the University of Arizona, who was interested in studying the solar system. In the summer of 1964, a road to the summit of Maunakea had been built by then Governor Burns, and the first seeing measurements were done by Kuiper's assistant Alika Herring. Alika was a native Hawaiian, and apart from being an excellent slack-key guitar player, was a master in polishing the most accurate mirror telescopes. His main interest was to make a map of the moon, as accurate as possible, in order to find landing sites for the Apollo Astronauts. When Alika used his best telescope on Maunakea, he realized that this is the best place in the world to do astronomy. In a sense, he prepared the next bold step for humans to go where no one else has set foot before, in the same spirit as his Polynesian ancestors.

Shortly thereafter, the University of Hawai'i won a competition to build the first telescope on Maunakea, with funds from NASA, in order to help the exploration of the solar system. This was also the foundation for the Institute for Astronomy. The telescopes, which are up on Maunakea today, are still at the leading edge of exploration and have found a large number of worlds outside our solar system. In concert with the TMT, they are preparing the next major bold step to reach for the planets around other stars.

The idea to use astronomy for the economic benefit of Hawai'i worked out. According to a study of UHERO the economic impact of astronomy in the State of Hawai'i is about 10% of the total impact of University of Hawai'i and about 30% of the economic impact in Hawai'i County. This will grow significantly with the TMT!

Günther Hasinger, April 15, 2015