

studying the universe

The best astronomical observations in the world happen on Maunakea, including Nobel Prize-winning research. It is home to some of the most scientifically productive telescopes in the world, making Hawai'i an international leader in astronomical science. We are proud of the value science brings to Hawai'i — it diversifies our strengths and reminds the world that we are so much more than a visitor destination.

Global scientific discoveries led by MKO

PŌWEHI, THE FIRST-EVER IMAGE OF A BLACK HOLE: Two Maunakea telescopes played a vital role in a groundbreaking initiative linking eight telescopes from six locations across the globe to form an Earth-sized telescope powerful enough to capture light from a supermassive black hole 55 million light-years away and produce the world's very first image of a black hole. Astronomers worked with Hawaiian language luminary Dr. Larry Kimura to name the black hole Pōwehi: embellished dark source of unending creation.



SUPERMASSIVE BLACK HOLE IN THE MILKY WAY: By measuring the motions of stars in the heart of our Milky Way galaxy, researchers revealed a black hole that is 4.1 million times the mass of our Sun. This discovery earned the 2020 Nobel Prize in Physics. In 2022, the world saw our galaxy's black hole for the very first time after a global team, which included two Maunakea Observatories, successfully captured an image of this elusive force of nature.

DARK ENERGY AND COSMIC ACCELERATION: While studying Type Ia supernovae, astronomers revealed that the universe's rate of expansion is accelerating. The repulsive force responsible for this acceleration is commonly known as "dark energy." This discovery earned the 2011 Nobel Prize in Physics.

EXTRASOLAR PLANETS: The first images of a planetary system orbiting another star were recorded on Maunakea.

'OUMUAMUA AND KILLER ASTEROIDS: Telescopes on Maunakea and Haleakalā are the world's leaders in detecting and studying near-earth asteroids, including those that may put Earth at risk. In 2017, the first object from interstellar space, a comet named 'Oumuamua from a distant star system, was discovered and characterized by telescopes on Maunakea and Haleakalā.

MOST-DISTANT GALAXIES: Our cosmic frontier has been pushed to new extremes through the discovery of some of the most distant objects ever detected. Maunakea Observatories helped astronomers reach back to a time when the universe was only five percent of its present age of 13.8 billion years.

