

COMMUNITY

Take a tour of the 'Cool Universe' with astronomer

Hear about "Exploring the Cool Universe" as Thomas Phillips, director of the Caltech Submillimeter Observatory, gives a history of the observatory's telescope and reviews its recent major discoveries at talks later this week in Waimea and Hilo.

The programs will be at 7 p.m. on Thursday, June 18, at the W.M. Keck Observatory Hualalai Learning Theater in Waimea and again on Saturday, June 20, in Hilo at the 'Imiloa Astronomy Center. Both talks are part of the June 2009 Directors' Lecture Series. Seats are available on a first-come, first-served basis.

The Caltech Submillimeter Observatory (CSO) first looked skyward in 1986 searching for light that borders between far-infrared and short-wave radio regions. Phillips will discuss the intricate details necessary to design the detectors that are able to

home in on this region of the electromagnetic spectrum. He, along with Robert Leighton, initiated the project to design the 10.4 meter Leighton telescope which sits near the summit of Mauna Kea.

"The CSO is one of the pioneering observatories dedicated to submillimeter astronomy," said Phillips.

Submillimeter radiation is generated in a variety of regions, including very cold, dusty interstellar clouds. These cold regions are the targets of various astronomical studies, including star formation, evolution of the interstellar medium, formation of planetary systems and evolution of stars, galaxies and the universe. But, the ability to detect submillimeter waves has been developed only in recent decades because water vapor in the Earth's atmosphere strongly absorbs submillimeter radiation. Because of this absorption, submil-

limeter telescopes need to be located at very high, dry sites, such as near the summit of Mauna Kea.

"The new technology of submillimeter detectors, combined with the availability of high-altitude sites, has resulted in submillimeter astronomy being one of the newest and least explored areas of astronomy," said Phillips.

Phillips received his B.A., M.A. and Ph.D. degrees at Oxford University in England. His graduate studies were in low temperature physics. After one year at Stanford University he moved to Bell Telephone Laboratories Physics Research laboratory at Murray Hill, N.J. There he developed techniques for millimeter and submillimeter wave detection for astronomy.

In 1975 he spent a year at London University as University Reader in Physics where he wrote the first

proposal for the James Clerk Maxwell Telescope. In 1979 he joined the faculty of Caltech as professor of physics. At Caltech he took on the task of construction of the Owens Valley Radio Observatory millimeter wave interferometer, as associate director of the observatory. In 1982 he became director designate for the Caltech Submillimeter Observatory, and in 1986, on successful completion of the construction, became director.

In 2004, Phillips received the Joseph Weber award of the American Astronomical Society and also became the Altair Professor of Physics at Caltech. His current research interests are in molecular and atomic spectroscopy of the interstellar medium and in the development of superconducting devices for submillimeter wave detection.

Phillips' presentation is the sixth in this year-

long free lecture series to commemorate the International Year of Astronomy (IYA 2009), a global celebration of astronomy and its contributions to society and culture, with events taking place in cities and towns across the globe. The Hilo lectures take place at 'Imiloa Astronomy Center's 120-seat planetarium on the third Saturday of each month during 2009.

This special year-long program replaces the center's monthly "Maunakea Skies" planetarium talks, which will resume in 2010.

Opened in 2006, 'Imiloa celebrates both Hawaiian culture and Mauna Kea astronomy. Through its exhibits and program, 'Imiloa strives to share inspiring examples of science and culture together advancing knowledge, understanding and opportunity. The center is located at 600 'Imiloa Place in Hilo, off Komohana and Nowelo

Streets at the UH-Hilo Science and Technology Park. For more information, go to www.imiloahawaii.org or call 969-9700 for recorded information, or 969-9703.

The W.M. Keck Observatory headquarters facility is at 65-1120 Mamalahoa Highway in Waimea. Keck Observatory operates twin 10-meter optical/infrared telescopes on the summit of Mauna Kea. The two telescopes feature a suite of advanced instrumentation including imagers, multi-object spectrographs, high-resolution spectrographs, integral-field spectrographs and a world-leading laser-guide-star adaptive optics system.

The observatory is operated as a scientific partnership among the California Institute of Technology, the University of California and NASA.

For information, please call 885-7887 or visit www.keckobservatory.org.